STEREO DOUBLE AUTO REVERSE CASSETTE DECK

X-ME5

SERVICE MANUAL

(UD-552)

KENWOOD

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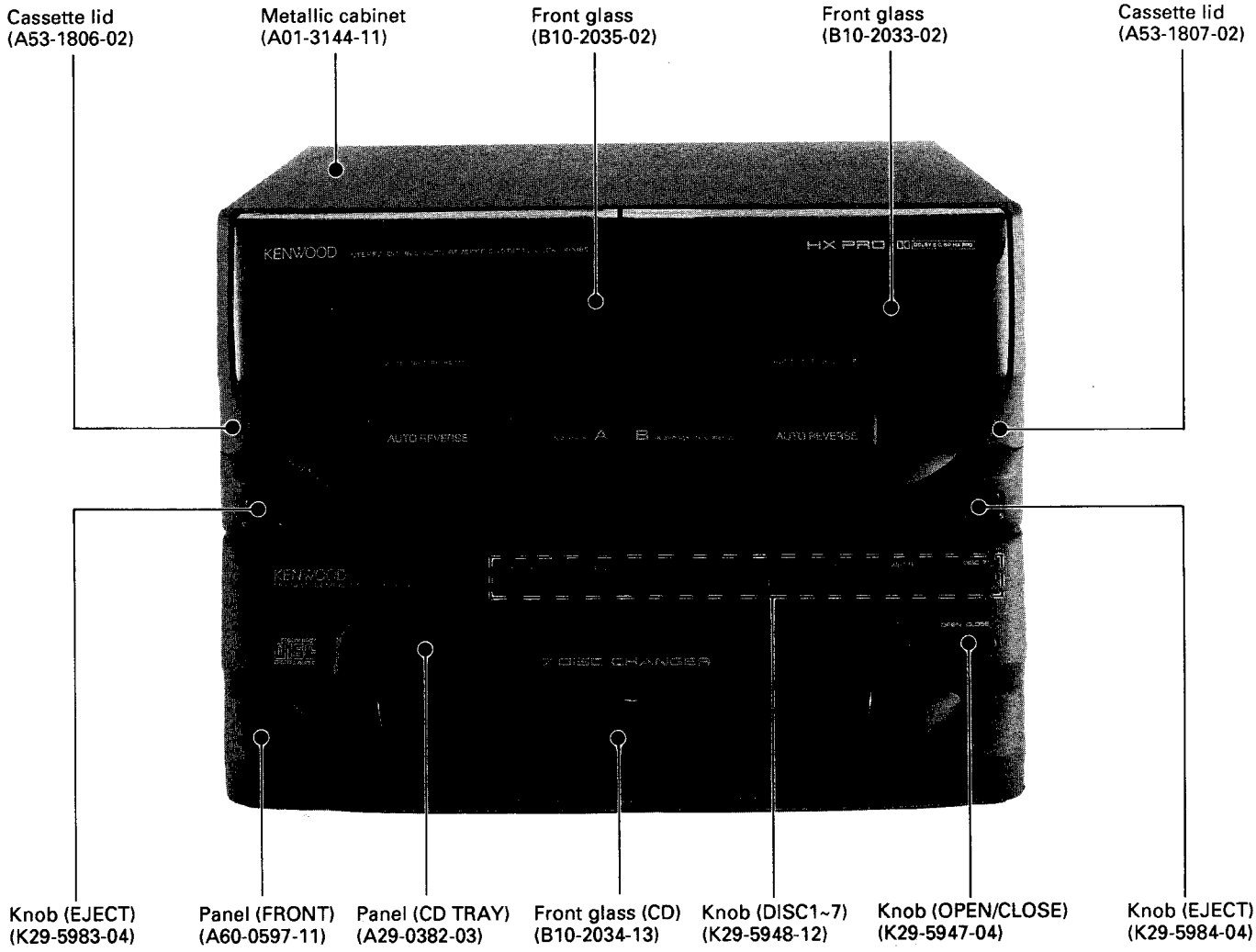


PRECAUTIONS FOR REPAIR

- Since the power for this device is supplied by the receiver/multi-command (A-E5/L), the latter or the jig (PS-93UA or PS-94UA) is required for repair of the former.
- Since this device does not have operation keys, we recommend to use A-E5/L. If this device is set to the test mode, the jig can be used
- For the operation of the cassette mechanism, see Service Manual (B51-4869-00) of RXD-C3/C3L.
- The CD mechanism disassembly for repair, see Service Manual (B51-4976-00) of X-ME7.

X-ME5

CONTENTS/EXTERNAL VIEW

CONTENTS

EXTERNAL VIEW 2
ACCESSORIES 3
PS-93UA or PS-94UA 4
CONTROL 6
REMOTE CONTROL OPERATION 7
BLOCK DIAGRAM 8
CIRCUIT DESCRIPTION 10
ADJUSTMENT ..... 19~21, 24, 25, 27~33
ADJUSTES 22, 23, 26
WIRING DIAGRAM 34
PC BOARD (COMPONENT SIDE VIEW) 35
SCHEMATIC DIAGRAM 39
EXPLODED VIEW
(CD MECHANISM) 51
(CASSETTE MECHANISM) 53
(UNIT) 54
PARTS LIST 55
SPECIFICATIONS ..... BACK COVER

EXTERNAL VIEW : REAR PANEL

ACCESSORIES

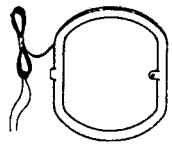
ACCESSORIES

System configuration

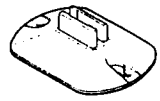
System (Destination)	Receiver/Multicommand	**Cassette deck/CD player**	System carton box (Parts No.)	Speaker (Other package)
UD-552 (P,M,X,Y,R)	A-E5	**X-ME5**	H60-0227-04	LS-E5
UD-552 (K)	A-E5	**X-ME5**	H60-0268-04	LS-E5
UD-552 (E,T,G)	A-E5L	**X-ME5**	–	LS-E5

- FM indoor antenna 1
  (T90-0182-15)

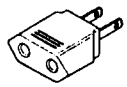
- AM loop antenna ass'y
  (T90-0195-05)



Loop antenna stand
(J19-3645-05)

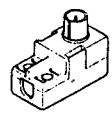


- AC plug adaptor 1
  (E03-0115-05)



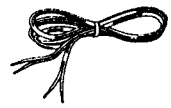
Except for the U.S.A., Canada, Europe, U.K. and Australia. For the unit with a European AC plug in areas other than Europe.

- Antenna adaptor 1
  (T90-0198-05)



For U.K. and Europe.

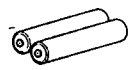
- Speaker cords 2
  (E31-5479-08)



- Remote control unit (RC-E5) 8
  (A70-0981-05)

Battery cover
(A09-0106-08)

- Batteries 2



Speaker cords are packed with the Speakers.

Beware of condensation

When water vapor comes into contact with the surface of cold material, water drops are produced.

If condensation occurs, correct operation may not be possible, or the unit may not function correctly.

This is not a malfunction, however, and the unit should be dried. (To do this, turn the POWER switch ON and leave the unit as it is for several hours.)

Be especially careful in the following conditions :

- When the unit is brought from a cold place to a warm place, and there is a large temperature difference.
- When a heater starts operating.
- When the unit is brought from an air-conditioned place to a place of high temperature with high humidity.
- When there is a large difference between the internal temperature of the unit and the ambient temperature, or in conditions where condensation occurs easily.

X-ME5

PS-93UA or PS-94UA

Model : PS-93UA or PS-94UA

Power supply for the audio model UD series.
Audio signal lines in 15P and 19P flat cable are connected to RCA connectors.

Explanation of the function

① **POWER SWITCH**
This switch should be turned on when using the 15 pin PRE CD DECK ③, the 19 pin PRE CD DECK ⑤ and 4 pin power supply ⑦.

② **15 PIN POWER AMP**
Connect to a system which require the 15 pin flat cable for connection, when check the power amp. section.
AC power source is not output from the terminal.
The signals are input and output to the RCA terminals and SYNC terminal on the front panel.
(ex : A-711, A-722, A-A7, B-992, B-A9, etc)

③ **15 PIN PRE CD DECK**
Connect to a system which require the 15 pin flat cable for connection, when check the functions except power section AMP.
The AC power are supplied to the pin No.12, 13 for 9V and the pin No.14, 15 for 16V from the terminal.
The signal flow are same as 15 pin power AMP terminal.
(ex : DP-711, DP-722, DP-A7, C-922, X-711, X-722, X-A7, etc)

④ **19 PIN POWER AMP**
Connect to a system which require the 19 pin flat cable for connection, when check the power AMP section.
The AC power is not supplied in the terminal.
The signals are input and output to the RCA terminal on the front of panel.
(ex : A-B7, A-B3, B-B9, A-E5, A-E7, B-E9, etc)

⑤ **19 PIN PRE CD DECK**
Connect to a system which require the 19 pin flat cable for connection, when check the component except power AMP. This terminal have the 4 system AC power supplies which is located to the pin No.13 to pin No.19.
(ex : X-B9, X-B5, X-B3, C-B9, DP-B5, DP-MB5, X-E5, X-ME5, X-E7, X-ME7, DP-E9, X-E9, C-E9, etc)

⑥ **SYNC TERMINAL**
Connect to the SYNCHRO CHECK JIG KSJ-0816. It can be controlled the system code 8 bit or 16 bit to the test set.

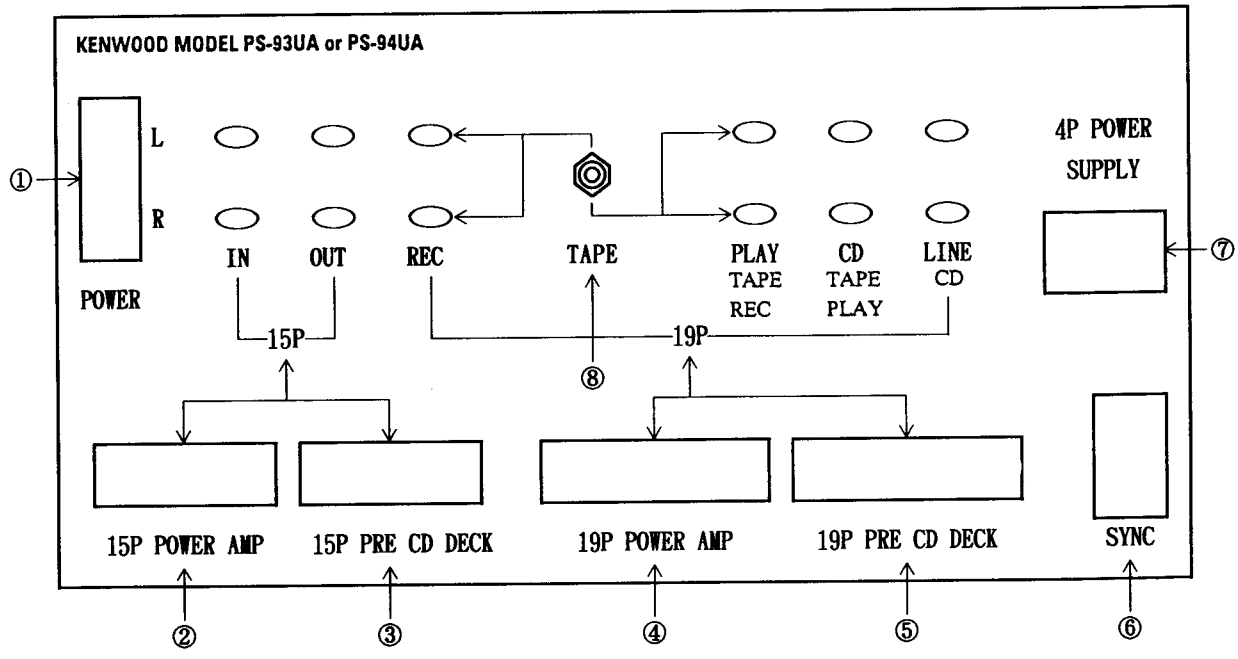
⑦ **4 PIN POWER SUPPLY**
Output terminal for AC 9V and AC16V.
It can be used supply the AC power to DECK, CD, TUNER for MIDI system.

⑧ **TAPE SWITCH**
The signal for deck of 19 pin terminal are share a well with the REC and PLAY.
So, please change the TAPE SW when DECK mode is PLAY or STOP then turn to the play, when DECK mode is REC or REC pause then turn to the REC.
(ex : X-B9, X-B5, X-B3, X-E9)

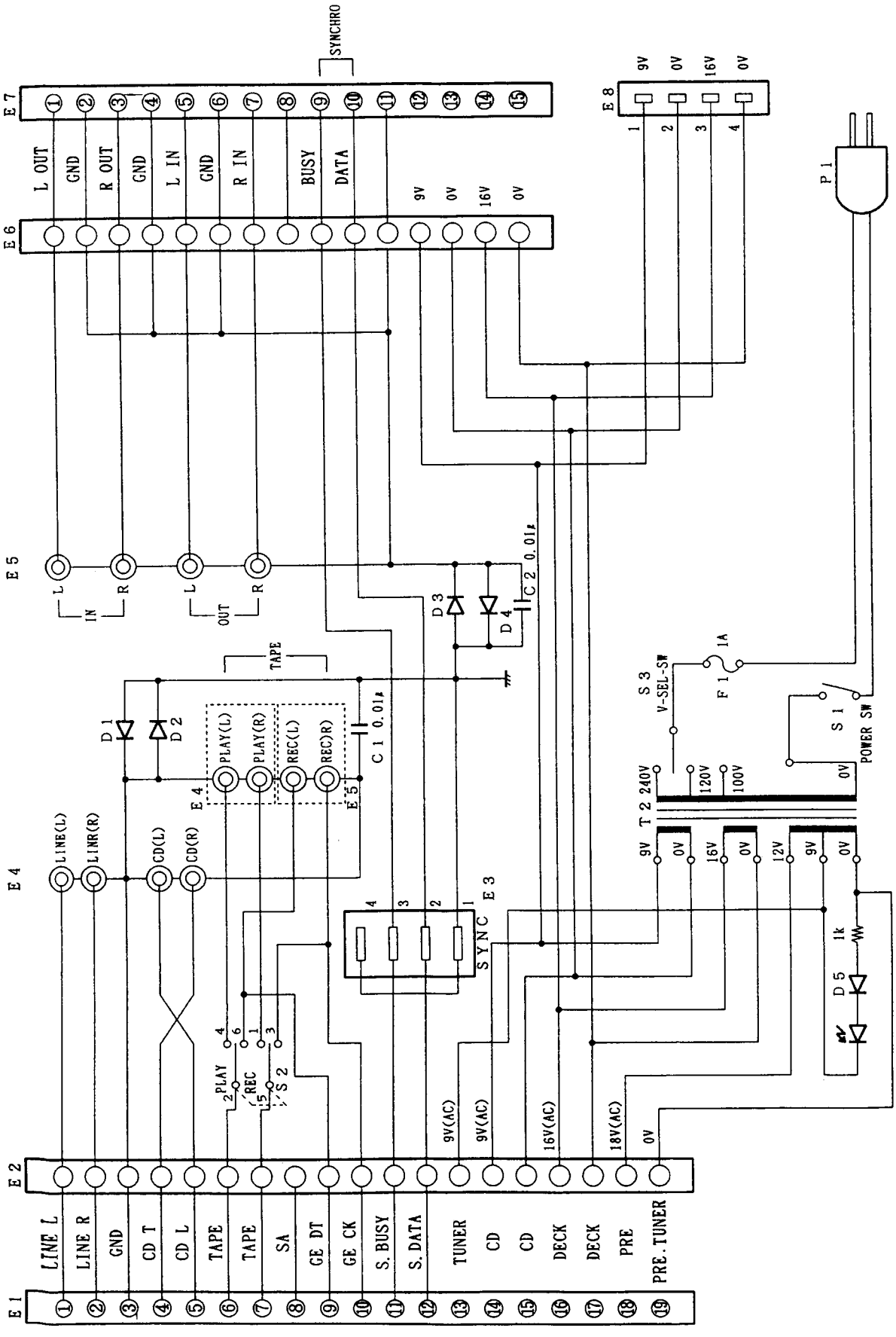
Note

For limited power supply's capacity, maximum connection is only one sets.
Do not connect a set together both with the 15 pin terminal and 19 pin terminal.

* In/output signals will shift as specified in the caution label when A-E5, A-E7, X-E5, X-ME5, X-E7, and X-ME7.
PLAY → TAPE REC
CD → TAPE PLAY
LINE → CD



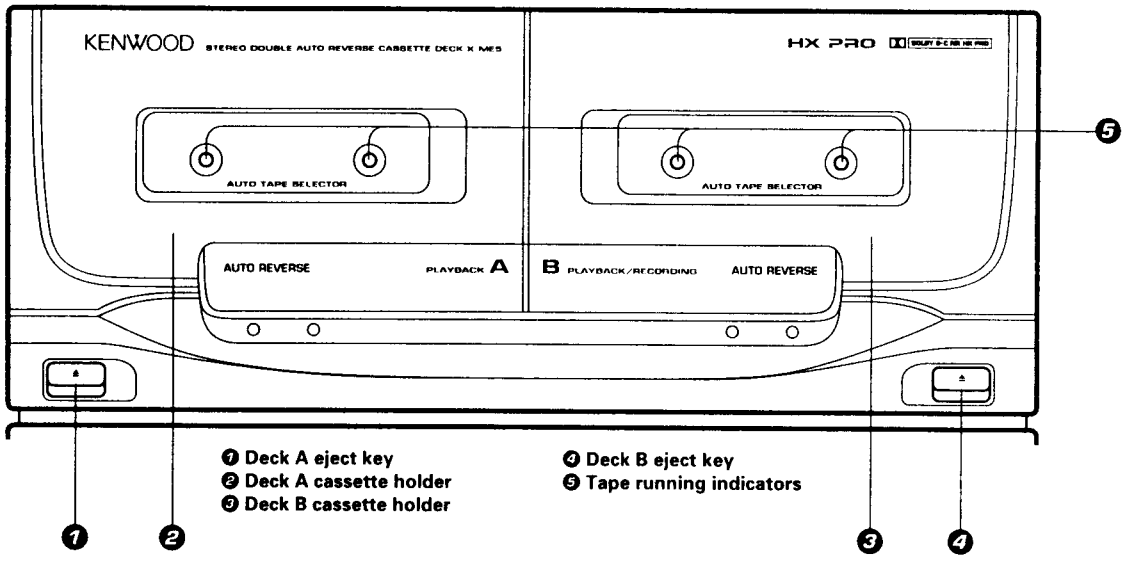
PS-93UA or PS-94UA



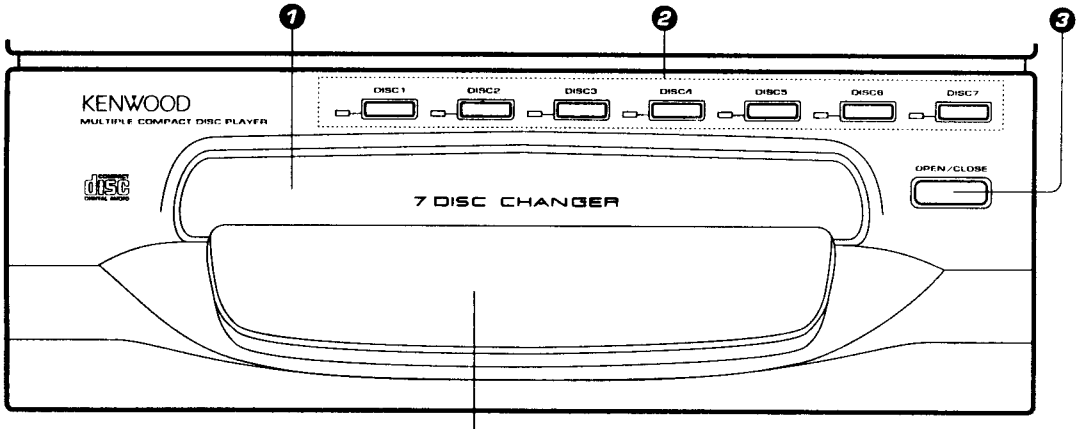
X-ME5

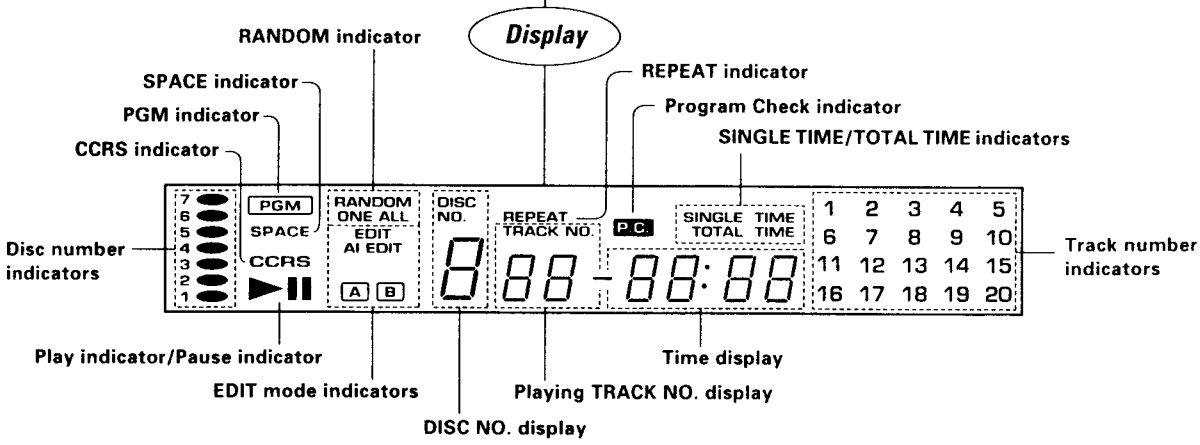
CONTROL

Cassette deck unit



CD player unit (UD-552)





❶ **Disc tray**

❷ **Disc selector keys/indicators**
Press a key to select the disc to be loaded, ejected or played.

❸ **OPEN/CLOSE key**
Press to load or eject the disc selected with the disc selector keys.

REMOTE CONTROL OPERATION

Remote control unit

Some of the keys of this remote control unit have variable functions. Before pressing one of these keys, please to make sure that the input of the system has been set to the desired source.

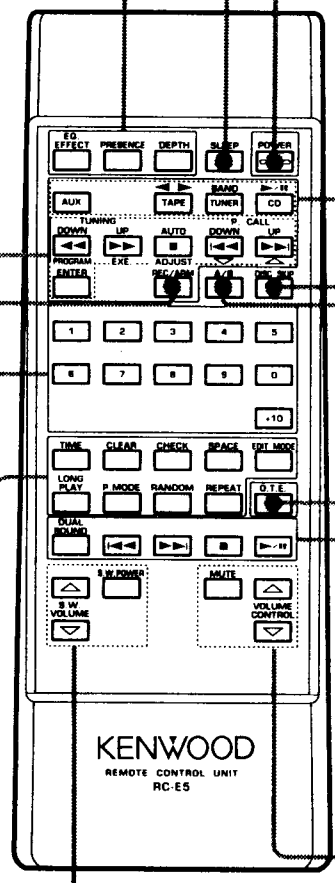
Graphic equalizer operation keys
EQ.EFFECT :Press to select a graphic equalizer effect.
PRESENCE :Press to select a presence effect.
DEPTH :Press to add depth to the sound field.

The functions are variable depending on the input mode or the power ON/OFF status.

REC/ARM key
Press to start recording. When the key is pressed during recording, the tape stops after leaving a non-recorded space of 4 seconds.

Numeric keys
Function as the numeric keys of the CD player when the CD input is selected.

CD player operation keys
TIME :Press to switch the time display mode.
CLEAR :Press to clear the contents of a program.
CHECK :Press to display the programmed contents in order.
SPACE :Press to leave non-recorded spaces of a few seconds between the programmed tracks.
EDIT MODE :Press to select the edit recording mode.
LONG PLAY :Press for long-hour playback.
P.MODE :Press for program playback.
RANDOM :Press to start random playback.
REPEAT :Press to start repeated playback.



Model: RC-E5
Infrared ray system

SLEEP key
Press to activate the sleep timer function.

POWER key

Input selector (basic operation) keys

DISC SKIP key
Press to select the disc to be played on the CD player.
(This key is invalid with the UD-502.)

A/B key
Press to select the cassette deck be operated.

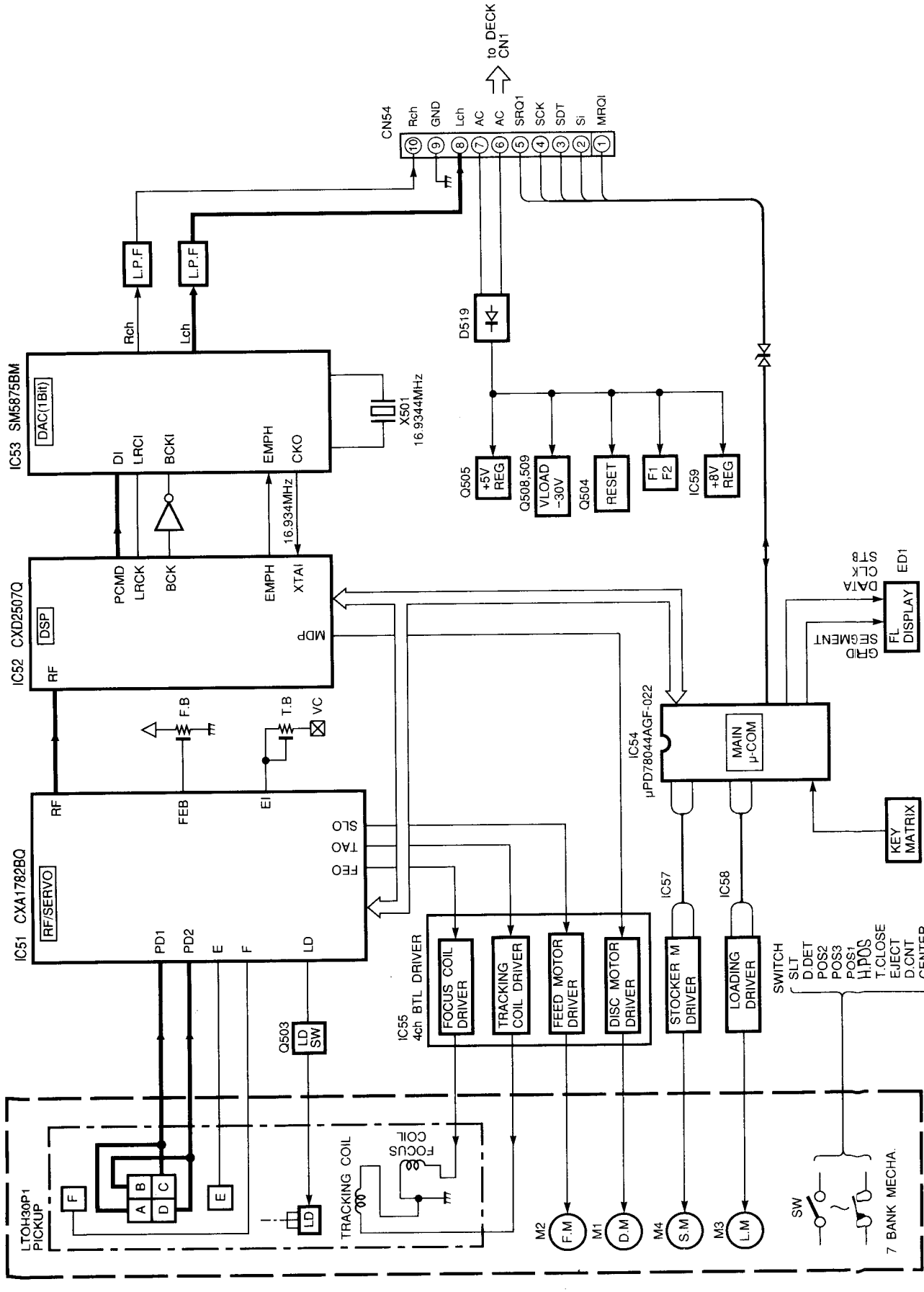
O.T.E. (One-Touch Edit) key
Press to record the CD track being played onto tape, etc.

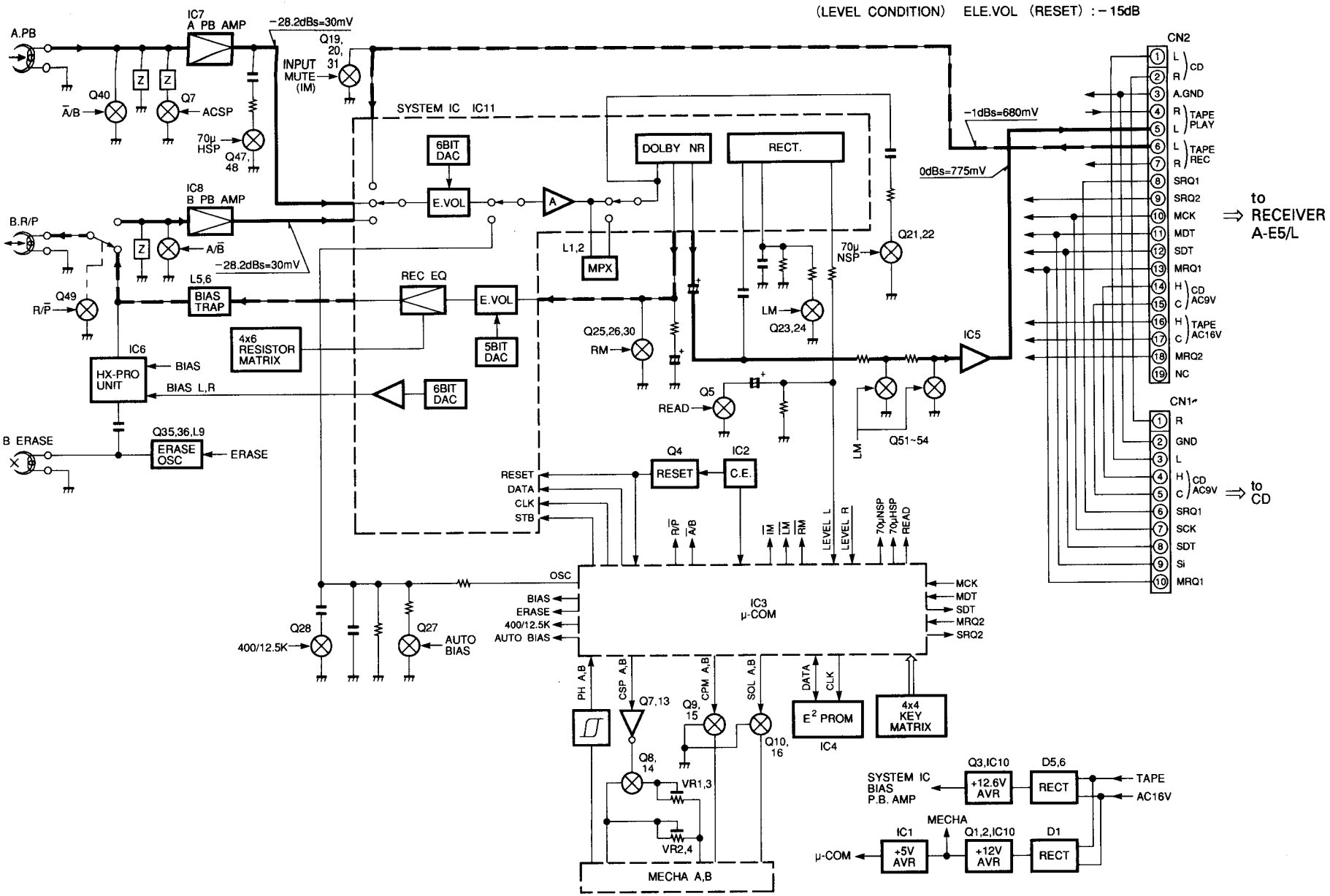
DUAL SOUND key
Press for Environmental Sound play (mixed playback of CD and another source).
I◄◄, ►►I, ■ and ►/II keys
Use these keys to operate the CD player during environmental sound play.

VOLUME CONTROL keys
Press to adjust the overall volume. When these keys are pressed, the current volume level is displayed on the receiver unit.
MUTE key
Press to mute the sound temporarily.

Super woofer operation keys
S.W. VOLUME
:Press to adjust the volume of the super woofer (optional).
S.W. POWER
:Press to switch the power of the super woofer (optional).

BLOCK DIAGRAM : CD





BLOCK DIAGRAM : DECK

X-ME5

CIRCUIT DESCRIPTION

1. CD μ-com : μPD78044AGF-022 (X28-2672-70 : IC54)

1-1. Explanation of functions

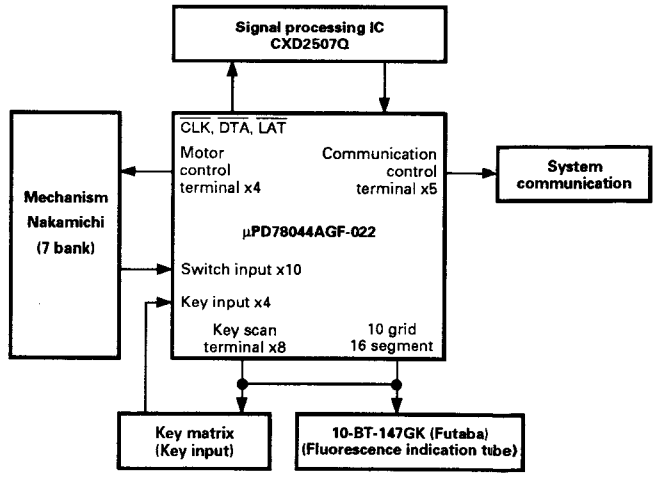
• Features

(1) 7-bank mechanism
(2) 20-tune music calendar
(3) 10-key direct play
(4) Editing function (Normal AI edit)
(5) CCRS
(6) System operation
(7) Delete random

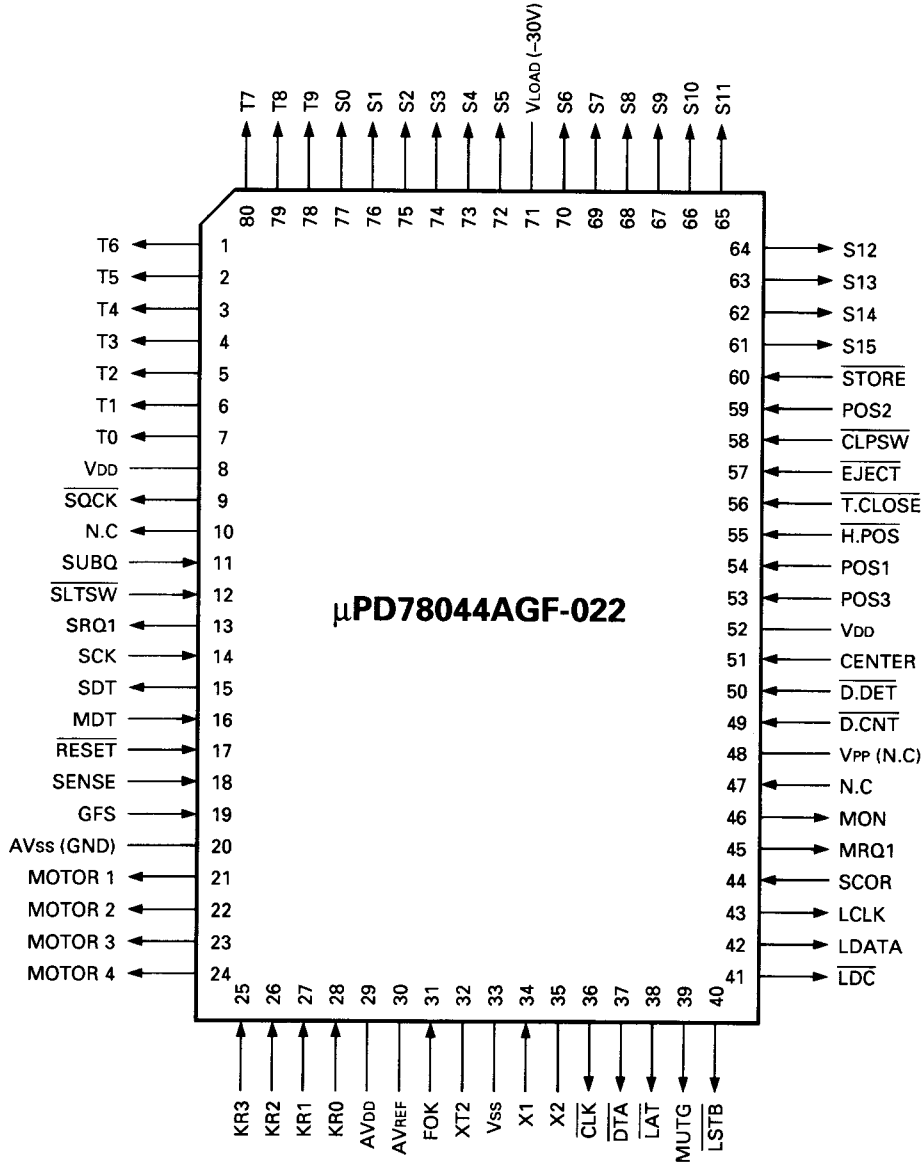
• Controlled items

(1) Digital signal processing IC : CXD2507Q
(2) RF signal processing servo amplifier : CXA1782BQ
(3) 8-bit serial parallel conversion (For control of LED)
: NJU3711M

1-2. Block diagram



1-3. Pin connection



CIRCUIT DESCRIPTION

1-4. Pin function

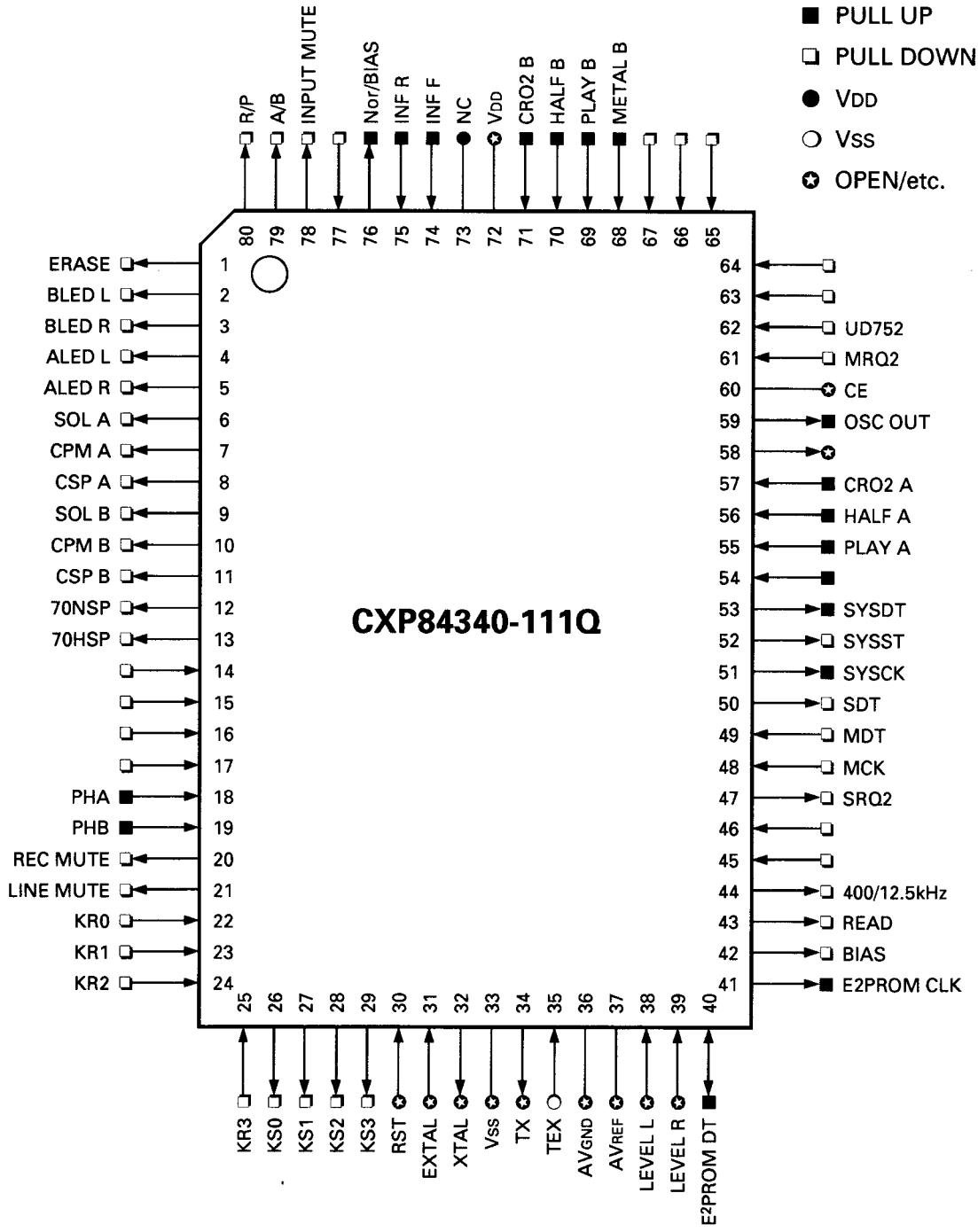
Pin No.	Pin name	I/O	Function
1~7	T6~T0	O	FL digit control 7G~1G.
8	VDD	–	Power supply (+5V).
9	SQCK	O	Q data reading clock output terminal.
10	N.C	O	No used.
11	SUBQ	I	Q data input terminal.
12	SLTSW	I	Start limit switch input.
13	SRQ1	O	Slave output request signal for system communication.
14	SCK	I	Clock input terminal for system communication.
15	SDT	O	Data output terminal for system communication.
16	MDT	I	Data input terminal for system communication.
17	RESET	I	Reset input terminal.
18	SENSE	I	SENSE input from CXD2507Q.
19	GFS	I	Frame signal input.
20	AVSS	–	No used (Connect to Vss).
21	MOTOR 1	O	Tray motor [FRONT] (H : Open).
22	MOTOR 2	O	Tray motor [REAR] (H : Close).
23	MOTOR 3	O	ST motor [UP] (H : ST↑, PIC↓).
24	MOTOR 4	O	ST motor [DOWN] (H : ST↓, PIC↑).
25~28	KR3~KR0	I	Key return input of key matrix.
29	AVDD	–	No used (Connect to VDD).
30	AVREF	–	No used (Connect to Vss).
31	FOK	I	FOK signal input.
32	XT2	–	No used (OPEN).
33	Vss	–	GND.
34	X1	I	System clock input.
35	X2	–	No used.
36	CLK	O	Clock output terminal to CXD2507Q.
37	DTA	O	Data output terminal to CXD2507Q.
38	LAT	O	Latch output terminal to CXD2507Q.
39	MUTG	O	Digital mute control terminal.
40	LSTB	O	STB control terminal to LED driving extension IC.

Pin No.	Pin name	I/O	Function
41	LDC	O	Laser signal output terminal.
42	LDATA	O	DATA control terminal to LED driving extension IC.
43	LCLK	O	CLK control terminal to LED driving extension IC.
44	SCOR	I	Sub-code frame sync detection signal terminal.
45	MRQ1	O	Master input request signal for system communication.
46	MON	O	Control terminal of circuit to prevent pulling in focus.
47	N.C	I	No used (Connect to VDD).
48	VPP	–	No used.
49	D.CNT	I	Stocker disc position sensor.
50	D.DET	I	Disc sensor (L: Disc is in).
51	CENTER	I	Tray center switch (L : Center).
52	VDD	–	Power supply (+5V).
53, 54	POS3, POS1	I	Pickup mechanism position sensing switch.
55	H.POS	I	Stocker position switch (L: Top).
56	T.CLOSE	I	Tray close switch (L: Closed).
57	EJECT	I	Tray open switch (L: Opened to end).
58	CLPSW	I	Clamp switch input (L : Center).
59	POS2	I	Pickup mechanism position sensing switch.
60	STORE	I	Carriage position switch. (L : In stocker).
61~68	S15~S8	O	FL segment control terminal k, l, p, o, m, n, i, j (Key scan).
69, 70	S7, S6	O	FL segment control terminal h, d.
71	VLOAD	–	Negative source power to drive FL (-30 V).
72~77	S5~S0	O	FL segment control terminal c, e, g, f, b, a.
78~80	T9~T7	O	FL digit control terminal 10G~8G.

CIRCUIT DESCRIPTION

2. DECK μ-com : CXP84340-111Q (X28-2672-70 : IC3)

2-1. Pin connection



CIRCUIT DESCRIPTION

2-2. Pin function

Pin No.	Pin name	I/O	Function
1	ERASE (PF3)	O	• Port for turning on/off ERASE head. • Turned on only in REC operation. H : ON, L : OFF
2	BLED L (PF4)	O	• Port for LED on left side of A-mechanism reel shaft. • Lights up when power is turned on. Flashes while mechanism is in operation, however. H : Lighting up, L : Going off
3	BLED R (PF5)	O	• Port for LED on right side of A-mechanism reel shaft. • Lights up when power is turned on. Flashes while mechanism is in operation, however. H : Lighting up, L : Going off
4	ALED L (PF6)	O	• Port for LED on left side of B-mechanism reel shaft. • Lights up when power is turned on. Flashes while mechanism is in operation, however. H : Lighting up, L : Going off
5	ALED R (PF7)	O	• Port for LED on right side of B-mechanism reel shaft. • Lights up when power is turned on. Flashes while mechanism is in operation, however. H : Lighting up, L : Going off
6	SOL A (PD0)	O	• Port for turning on/off A-mechanism solenoid. • Condition of mechanism is changed by changing length of time while this port is set to H level. Turned on only during transition. H : ON, L : OFF
7	CPM A (PD1)	O	• Port for turning on/off A-mechanism capstan motor. • Mechanism is in operation, this port is kept at H level. Capstan motor is turned off only when mechanism is stopped. H : ON, L : OFF
8	CSP A (PD2)	O	• Port for speed control of A-mechanism capstan motor. • While this port is at L level, capstan motor turns at double normal speed. Set to L level only while high-speed dubbing and transition of mechanism. H : Normal, L : Double speed
9	SOL B (PD3)	O	• Port for turning on/off B-mechanism solenoid. • Condition of mechanism is changed by changing length of time while this port is set to H level. Turned on only during transition. H : ON, L : OFF
10	CPM B (PD4)	O	• Port for turning on/off B-mechanism capstan motor. • Mechanism is in operation, this port is kept at H level. Capstan motor is turned off only when mechanism is stopped. H : ON, L : OFF
11	CSP B (PD5)	O	• Port for speed control of B-mechanism capstan motor. • While this port is at L level, capstan motor turns at double normal speed. Set to H level only while except high-speed dubbing and transition of mechanism. H : Normal, L : Double speed
12	70NSP (PD6)	O	• Port for changing normal playback equalizer. • Turned on while chromium tape is played normally. Default is OFF and bias of 120μs is applied. H : ON (70μs), L : OFF (120μs)
13	70HSP (PD7)	O	• Port for changing double-speed playback equalizer. • Turned on while chromium tape is played at double-speed. Default is OFF and bias of 120μs is applied. H : ON (70μs), L : OFF (120μs)
14~17	(PC0~PC3)	I	• Unused terminals.
18	PHA (PC4)	I	• Photo-sensor input port of A-mechanism. • Light is applied to reflector at rear of reel stand. H/L is judged by reflected light to sense running of tape and use result for counter. • Running of tape is sensed at both edges. Counter counts one every four senses.
19	PHB (PC5)	I	• Photo-sensor input port of B-mechanism. • Light is applied to reflector at rear of reel stand. H/L is judged by reflected light to sense running of tape and use result for counter. • Running of tape is sensed at both edges. Counter counts one every four senses.
20	REC MUTE (PC6)	O	• Mute just before REC EQ. • Turned off only during REC operation. H : OFF, L : ON
21	LINE MUTE (PC7)	O	• Mute at LINE OUT of playback system. • Turned off only during playback and recording operation, including transition time of mechanism. H : OFF, L : ON
22~25	KR0~KR3	I	• Key return port for test mode. • Key is taken through this port to realize test mode with key of body.
26~29	KS0~KS3	O	• Key scan port for test mode. • Key is taken through this port to realize test mode with key of body. • TSCN3 composes short matrix of test mode.
30	RST (RST)	I	Reset terminal of device.
31	EXTAL (EXTAL)	I	• Terminal for oscillation of device. • 10 MHz is connected.
32	XTAL (XTAL)	O	• Terminal for oscillation of device. • 10 MHz is connected.
33	V_{SS} (V_{SS})	–	• Grounding terminal.
34	TX (TX)	O	• Terminal for sub-oscillation of device. • Unused.
35	TEX (TEX)	I	• Terminal for sub-oscillation of device. • Unused
36	AV_{GND} (AV_{GND})	–	• Terminal for ground level of A/D conversion. • Generally, potential of V_{SS} is input.
37	AV_{REF} (AV_{REF})	–	• Terminal for upper level of A/D conversion. • Generally, potential of V_{DD} is input.
38	LEVEL L (PA0)	I	• Port for detection of L-channel signal level of tape. • A/D conversion is performed to detect level.
39	LEVEL R (PA1)	I	• Port for detection of R-channel signal level of tape.• A/D conversion is performed to detect level.
40	E^2PROM DT (PA2)	I/O	• Port for reading and writing data of E^2PROM. • All data which deck must save are written in this IC.

CIRCUIT DESCRIPTION

Pin No.	Pin name	I/O	Function
41	E²PROM CLK (PA3)	O	• Port for supplying clock for E²PROM.
42	BIAS (PA4)	O	• Port for turning on/off bias for REC operation. • Turn on only during REC operation. H : ON, L : OFF
43	READ (PA5)	O	• Port for turning on/off addition capacitive load for removing ripples from signal when level is read in automatic adjustment or ATCS operation. • Normally turned off. H : ON, L : OFF
44	400/12.5kHz (PA6)	O	• Port for changing filter for automatic adjustment. • Filter is changed according to OSC output. H : 12.5 kHz, L : 400 kHz
45, 46	(PA7, PB0)	I	• Unused terminal.
47	SRQ2 (PB1)	O	• Stand-by port for communication with receiver and request for and receiving data from deck. • Micro-controller of deck set this port to H level to request for release of bus from master (micro-controller of receiver) when sending data. • When receiving, micro-controller of deck notifies receiver that it is ready to receive data. H : Request, Ready, L : In communication, bus released
48	MCK (PB2)	I	• Terminal for communication with receiver and input of outside clock. • Deck sends and receives data according to clock output by receiver. • Used as SERIAL COMMUNICATION BUSY terminal when started in unit mode.
49	MDT (PB3)	I	• Terminal for communication with receiver and input of master data. • Data for deck are input through this terminal. • Used as SERIAL COMMUNICATION DATA terminal when started in unit mode.
50	SDT (PB4)	O	• Terminal for communication with receiver and output of slave data. • Data from deck are output through this terminal, synchronized with MCK clock.
51	SYSCK (PB5)	O	• Clock port for control of system IC.
52	SYSST (PB6)	O	• Strobe port for control of system IC.
53	SYSDT (PB7)	O	• Data port for control of system IC.
54	(PE0)	I	• Unused terminal.
55	PLAY A (PE1)	I	• SW to detect A-mechanism head position. • This port is tested at every point of transition of mechanism. For example, if head is lifted up at last of playback, this port is set to L level. H : Head DOWN, L : Head UP
56	HALF A (PE2)	I	• SW to detect tape in A-mechanism. • Tape in mechanism is judged by condition of this port. H : Tape is not mounted, L : Tape is mounted
57	CRO2 A (PE3)	I	• SW to detect chromium tape position of A-mechanism. • Chromium tape position is recognized at H level. H : Chromium tape position, L : Normal position
58	(PE4)	O	• Unused terminal.
59	OSC OUT (PE5)	O	• Output terminal of oscillator for automatic adjustment. • 400 Hz and 12.5 kHz are output.
60	(PI0)	–	• Terminal to detect chip enable. • Port to detect turning off of power. H : Power is turned on, L : Power is turned off.
61	MRQ2 (PI1)	I	• Stand-by port for communication with receiver and request for and receiving data from master. • Micro-controller of deck confirms that this port is set to H level before starting transmission, and recognizes transmission from master when this port is set to H under normal condition. This detection is made at interruption level. H : Request, Ready, in communication, L : Bus released
62	UD752 (PI2)	I	• Pulled up when used in mode of UD-752. H : UD-752 mode, L : UD-502/562 mode
63~67	(PI3~PI7)	I	• Unused terminal.
68	METAL B (PG0)	I	• SW to detect metal tape position of B-mechanism. • Detects only in UD-752 mode. • Recognize metal tape position at H level. H : Metal tape position, L : Normal or chromium tape position
69	PLAY B (PG1)	I	• SW to detect B-mechanism head position. • This port is tested at every point of transition of mechanism. For example, if head is lifted up at last of playback, this port is set to L level. H : Head DOWN, L : Head UP
70	HALF B (PG2)	I	• SW to detect tape in B-mechanism. • Tape in mechanism is judged by condition of this port. H : Tape is not mounted, L : Tape is mounted
71	CRO2 B (PG3)	I	• SW to detect chromium tape position of B-mechanism. • Chromium tape position or metal tape position is recognized at H level. H : Chromium tape or metal tape position, L : Normal position
72	VDD (VDD)	–	• Power supply terminal for device.
73	NC (NC)	–	• Empty terminal. Connected to Vdd.
74	INF F (PG4)	I	• SW to inhibit recording on A-side of B-mechanism. • Set to L level when recording on A-side of B-mechanism is inhibited. H : Recording is permitted, L : Recording is inhibited

CIRCUIT DESCRIPTION

Pin No.	Pin name	I/O	Function
75	INF R (PG5)	I	• SW to inhibit recording on B-side of B-mechanism. • Set to L level when recording on B-side of B-mechanism is inhibited. H : Recording is permitted, L : Recording is inhibited
76	Nor/ABIAS (PG6)	O	• Port to change level in automatic adjustment. • Level is changed for playback mode adjustment and recording/playback mode adjustment. H : Recording/Playback adjustment, L : Playback adjustment
77	(PG7)	I	• Unused terminal.
78	INPUT MUTE (PF0)	O	• Mute at inlet of REC system. • Turned off when REC operation starts. Kept turned on in other conditions. H : OFF, L : ON
79	A/B (PF1)	O	• Port to select A-mechanism or B-mechanism. • Since two mechanisms are installed while only one circuit is installed, one is selected with this port. H : B-mechanism, L : A-mechanism
80	R/P (PF2)	O	• Port to select head route. • Used to select playback head or recording head. H : Recording, L : Playback

2-3. Pin explanation

• Features

(a) Reverse-type, double deck (A- and B-decks).
(b) B-deck can record.
(c) CCRS and CRLS functions.
(d) DPSS skip search function (16 stations maximum).
(e) Dolby B, C
(f) Dubbing function (Normal speed, high speed)
(g) 3-mode direction (One-way, U, endless)
(h) Matched to long play and one-touch editing functions
(i) Two tape positions (Normal, chromium)

• Controlled items

(1) Cassette mechanism
Playback mechanism (D40-1363-*5)
Recording mechanism (D40-1364-*5)

(2) System IC : HA12167FB

(3) E^2PROM : XL24C01A

CIRCUIT DESCRIPTION

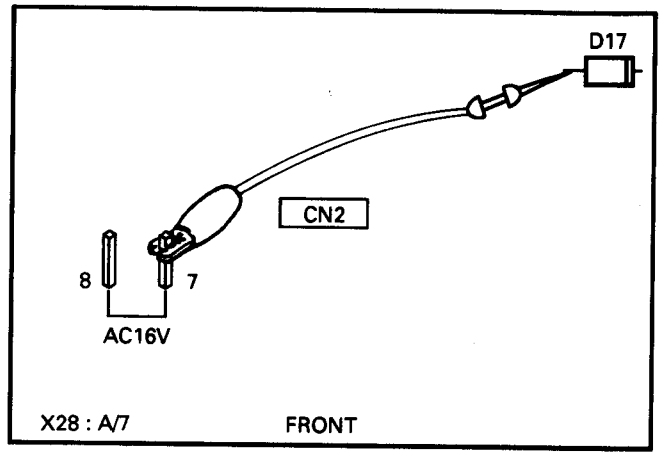
3. Test mode (Cassette deck)

3-1. Initial setting

The deck is set initially under the following conditions.

Power	: ON
Mechanical mode	: Stop
Direction	: Both A and B are set forward.
Right to operate	: B
CCRS/CRLS	: OFF
Operation mode	: U mode
DOLBY NR	: OFF
Input	: Tuner
REC level	: Initial value
Playback equalizer	: 120NSP
All mute	: ON
Erasing head	: OFF
R/P	: Play
A/B	: A
Reel LED	: ON

When turning on the power for the Cassette deck independently, be sure to connect AC16V (No. 7 or 8) and D17 (ANODE) of (X28 : A/7) . (Remove this connection after the power is turned on.)



3-2. Types of test mode

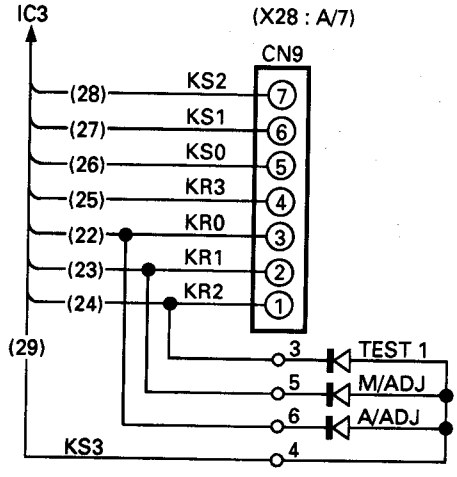
(1) Test 1
(2) Manual adjustment
(3) Automatic adjustment

3-3. Setting of test mode

The machine is set in the test mode under the following port conditions when it is reset.

KS3	KR3	KR2	KR1	KR0
AUTO ADJ	0	0	0	1
MANU ADJ	0	0	1	0
TEST1	0	1	0	0
INITIAL SET	0	1	1	0
DON'T CARE	Other matters			

(See remarks.) 0 : Open, 1 : Short



CIRCUIT DESCRIPTION

3-4. TEST 1

• Setting

· System (A-E5+X-ME5) :
Shorting the No. 4 pin to the No. 3 pin by a diode (Direction: No. 4 →|← No. 3), press the [POWER] key of the receiver (A-E5).

· Unit (X-ME5) :
Shorting the No. 4 pin to the No. 3 pin by a diode (Direction: No. 4 →|← No. 3), turn on the [POWER] switch of the power supply jig.

• Resetting

· System (A-E5+X-ME5) :
Press the [CCRS/CRLS] key or POWER key to turn off the power.

· Unit (X-ME5) :
Turn off the POWER switch of the power supply jig or short No. 1 of CN9 to No. 7.

• Contents and operation

	Contents	System	* Unit
1	4-sec REC	[REC] key	4, 5 pin
2	13-sec REC	[SKIP UP] key (⏭)	4, 6 pin
3	A/B FWD normal speed playback	[REW] key (◀◀)	1, 6 pin
4	A/B FWD double speed playback	[FF] key (▶▶)	2, 6 pin
5	A/B RVS normal speed playback	[SKIP DOWN] key (⏮)	3, 6 pin
6	CCRS level test	[NOR DUBB] key	3, 7 pin
7	Electronic volume 3-level control	[HI DUBB] key	4, 7 pin

*Short pins of CN9 for the independent operation of unit.

• Allotment of keys

	KS0 <5 pin>	KS1 <6 pin>	KS2 <7 pin>
KR0 <3 pin>	STOP	RVS normal speed playback (⏮)	CCRS TEST (N/DUBB)
KR1 <2 pin>	TAPE	FWD Double speed playback (▶▶)	DOLBY
KR2 <1 pin>	A/B	FWD normal speed playback (◀◀)	Reset →Normal (CCRS/CRLS)
KR3 <4 pin>	4-sec REC (REC)	13-sec REC (⏭)	Electronic volume control (H/DUBB)

< > : CN9 (X28 : A/7), ( ) : Keys of receiver used in normal mode

When performing this operation, press the keys of the receiver having the names of the above keys used in the normal mode.

For example, since the [NOR DUBB] key is used as the key for the CCRS test in the normal mode, the [NOR DUBB] key of the receiver is used for this purpose.

• Indication

Items indicated with LED

These items are indicated with LED in either the system or the unit mode.

The LED on the L side of the A-deck indicates the tape type of the half in the A-deck, and the R side indicates the tape type of the half in the B-deck as follows.

Turned off : Normal tape
Turned on : Chromium tape

The LED of the B-deck indicates the condition of the dolby.

	B REEL LED	
	L SIDE	R SIDE
DOLBY OFF	○	○
DOLBY B	●	○
DOLBY C	○	●

(Remarks) ○ : Turned off., ● : Turned on.

CIRCUIT DESCRIPTION

Specifications

The machine is set in the test mode, regardless of the positions of the switches and mounting of tapes. Even if the head is lifted up, the following operation is executed after initial setting.

- **Initial setting**

The REC level is set to the initial level (–15dB) by the center.

- **4-sec REC**

If the [REC] key is pressed, the deck records for 4 seconds, then automatically rewinds to the starting point of recording and plays back.
The REC key is accepted infinitely.
If the [REC] key is pressed again during 4-sec REC operation, the machine records for 4 seconds again from the current point, then rewinds to the starting point of the first 4-sec REC and plays back.
If a tape is selected, the following operation starts.

①When normal tape is used
- The machine performs the 4-sec REC with the dolby turned off, then rewinds to the starting point of recording and plays back.
- The machine plays back with the dolby turned off.

②When chromium tape is used
- The machine performs the 4-sec REC with the dolby C turned on, then rewinds to the starting point of recording and plays back.
- The machine plays back with the dolby turned off.

③When metal tape is used
- The machine performs the 4-sec REC with the dolby B turned on, then rewinds to the starting point of recording and plays back.
The machine plays back with the dolby turned off.

After playing for 4 seconds, the machine continues playing under the current dolby condition. If the [STOP] key is pressed, the operation is stopped and the dolby is turned off.

- **13-sec REC**

If the [SKIP UP] key is pressed, the deck records for 13 seconds, then automatically rewinds to the starting point of recording and plays back.
The [SKIP UP] key is accepted infinitely.
If the [REC] key is pressed again during 13-sec REC operation, the machine records for 13 seconds again from the current point, then rewinds to the starting point of the first 13-sec REC and plays back.
The details of the operation are the same as the 4-sec REC.

- **PLAY for adjustment of tape speed (Common to A- and B-mechanism)**

If the [FF] key is pressed, the machine performs high-speed FWD playback.
If the [REW] key is pressed, the machine performs normal-speed FWD playback.
If the two keys are pressed alternately while the machine is playing, the head is not lowered, but only the speed is changed.
If the [SKIP DOWN] key is pressed, the machine performs normal-speed RVS playback.

- **Cyclic change of electronic volume**

If the [HI DUBB] key is pressed, the volume is changed (–∞ → -15 dB → 0 dB)

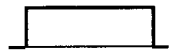
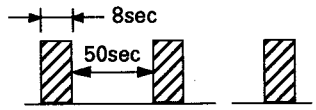
- **NOR-CCRS (Confirmation of lowering of REC volume level)**

If the [NOR DUBB] key is pressed, recording is paused. If an excessive input is received, the recording level is lowered.

ADJUSTMENT

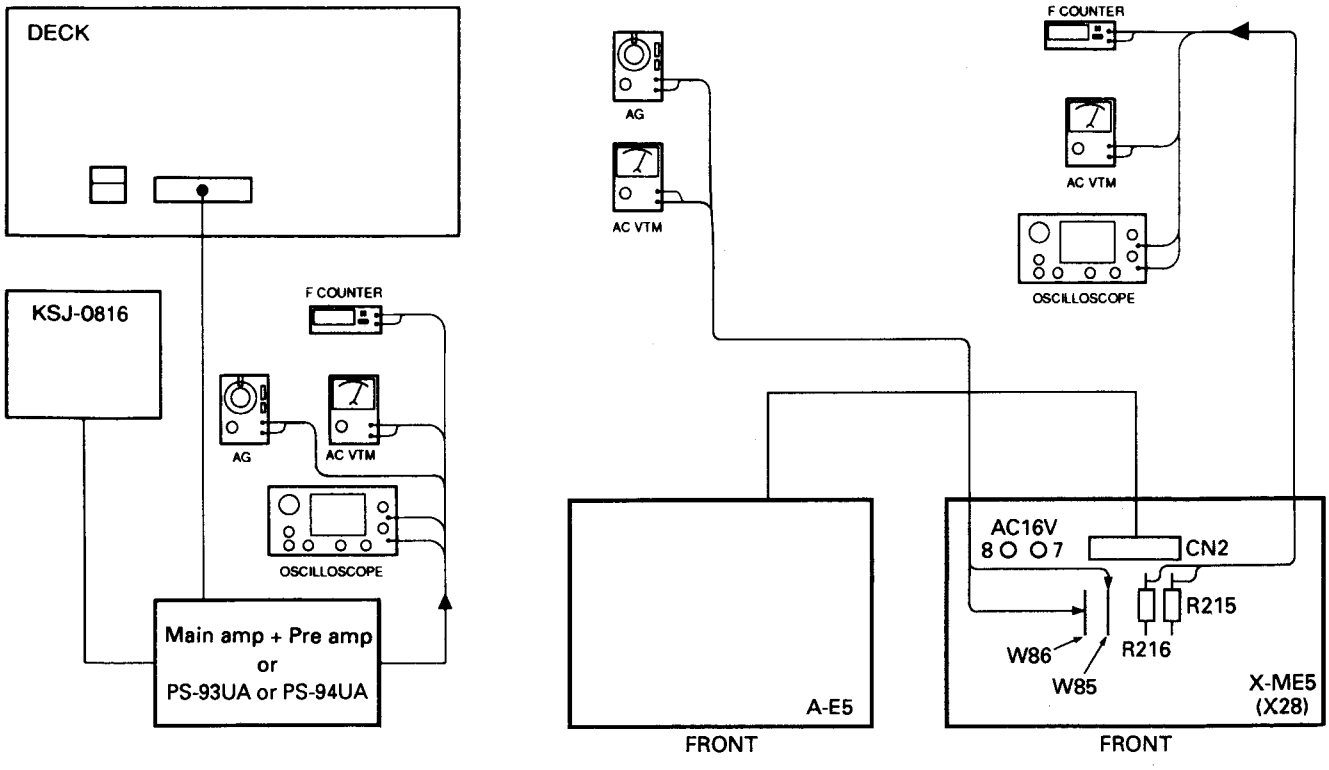
Preparation for adjustment

1. Supply the power of AC14~16V from the main amplifier or the jig.
2. When performing automatic adjustment, prepare a dolby level tape (TCC-130 or MTT-150) and a tape conformed to SCC-2280.

DOLBY LEVEL CALIBRATION	TCC-130 MTT-150	DOLBY B·TYPE TONE 200nWb/m	DOLBY B·TYPE TONE 
DOLBY LEVEL + Alignment	SCC-2280	DOLBY B·TYPE TONE 200nWb/m	

3. If a synchronism check jig is available, connect it. (KSJ-0816)

Connection diagram



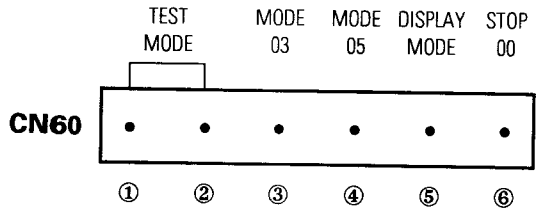
ADJUSTMENT

Adjustment (CD player)

Test mode

Pin No. (CN60)	Key name	Function	Display
1, 2	TEST PIN	TEST MODE SET	00
1, 3	CHECK	FOCUS SERVO ON TRACKING SERVO OFF FEED SERVO OFF	03
1, 4	PLAY	FOCUS SERVO ON TRACKING SERVO ON FEED SERVO ON	05
1, 5	UP	Cyclic indication of all-light-up mode/all-go-off mode of LF display.	
1, 6	STOP	FOCUS SERVO OFF TRACKING SERVO OFF FEED SERVO OFF	00

Setting of test mode : CN60 (X28 : C/7) Set above mode.



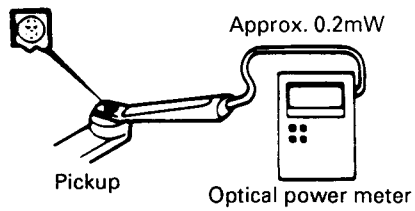
EX. Setting of test mode : Shorting the No. 1 pin to the No. 2 pin
Setting of all-light-up mode : Shorting the No. 1 pin to the No. 5 pin

ADJUSTMENT

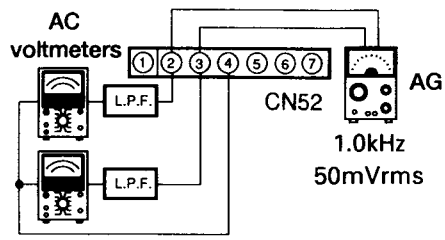
NO.	ITEM	INPUT SETTING	OUTPUT SETTING	PLAYER SETTING	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	LASER POWER	–	Apply the sensor section of the optical power meter on the pickup lens.	Short 1 pin and 2 pin of CN60 and enter the test mode. Short 1 pin and 3 pin of CN60. The LD emets light. Then, confirm that the display is "03" (X28- C/7)	–	On the power approx. 0.2mW, when the diffraction grating is correctly a ligned with the RF level of 1.5Vp-p or more and the TE (servo open) level of 1.5Vp-p or more, the pickup is acceptable.	(a)
2	TRACKING ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1 : RF (CN52-1) CH2 : TE (CN52-6)	Set the test disc on the tray. Short 1 pin and 2 pin of CN60, and enter the test mode. Short 1 pin and 3 pin of CN60, and confirm that the display is "03".	TE BALANCE VR52	Symmetry about Vc standard voltage or DC = 0±0.05 V	(b)
3	FOCUS ERROR BIAS	Test disc Type 4	Connect an oscilloscope as follows. CH1 : RF (CN52-1) CH2 : FE (CN52-2)	Short 1 pin and 2 pin of CN60, and enter the test mode. Short 1 pin and 4 pin of CN60, and confirm that the display is "05".	FE BIAS VR51	Optimum eyepattern	(C)
4	FOCUS GAIN	Test disc Type 4 Apply a signal of 1kHz/50mVrms to 2 pin and 3 pin of CN52.	Connect a LPF to 2 pin and 3 pin of CN52, to which connect an oscilloscope or two AC voltmeters.	Short 1 pin and 2 pin of CN60, and enter the test mode Short 1 pin and 4 pin of CN60, and confirm that the display is "05".	FOCUS GAIN VR53	Two VTVMs should read the same value.	(d)
5	TRACKING GAIN	Test disc Type 4 Apply a signal of 1kHz/50mVrms to 5 pin and 6 pin of CN52.	Connect a LPF to 5 pin and 6 pin of CN52, to which connect an oscilloscope or two AC voltmeters.	Short 1 pin and 2 pin of CN60, and enter the test mode. Short 1 pin and 4 pin of CN60, and confirm that the display is "05".	TRACKING GAIN VR54	Two VTVMs should read the same value.	(e)

(NOTE) Type 4 disc : SONY YEDS-18 TEST DISC or equivalent.
LPF : Around 47kΩ+390pF or so.

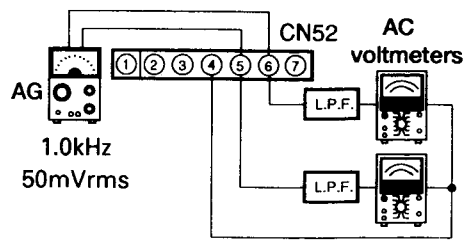
(a) Laser power



(d) Focus gain



(e) Tracking gain



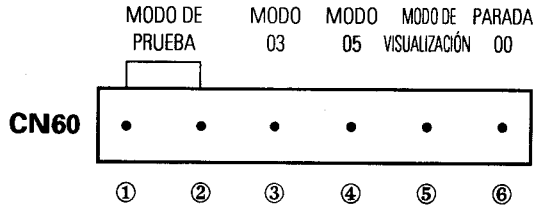
ADJUSTES

Adjustes (Reproductor de discoa compactos)

Modo de prueba

Núm.de patilla (CN60)	Nombre la de la tecla	Función	Visualización
1, 2	PATILLA DE PRUEBA	AJUSTE DEL MODE DE PRUEBA	00
1, 3	COMPRO BACIÓN	SERVO DE ENFOQUE ACTIVADO SERVO DE ALINEACIÓN DESACTIVADO SERVO DE ALIMENTACIÓN DESACTIVADO	03
1, 4	REPRO DUCCIÓN	SERVO DE ENFOQUE ACTIVADO SERVO DE ALINEACIÓN ACTIVADO SERVO DE ALIMENTACIÓN ACTIVADO	05
1, 5	HACIA ARRIBA	Indicación cíclica en modo de iluminación completa/apagado completo del visualixzador LF.	
1, 6	PARADA	SERVO DE ENFOQUE DESACTIVADO SERVO DE ALINEACIÓN DESACTIVADO SERVO DE ALIMENTACIÓN DESACTIVADO	00

Ajuste del modo de prueba : CN60 (X28 : C/7) ajuste al modo de arriba.



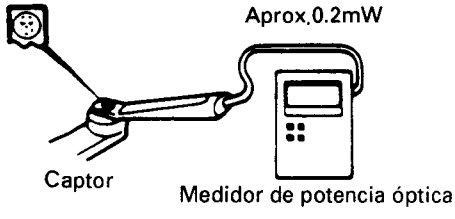
EJ. Ajuste del modo de prueba : Cortocircuite las patillas 1 y 2.
Ajuste del modo de iluminación completa : Cortocircuite las patillas 1 y 5.

ADJUSTES

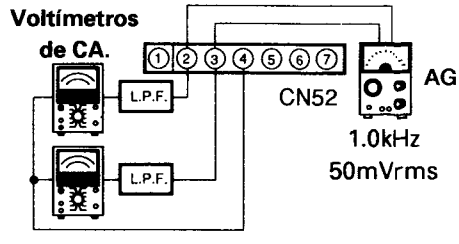
N.O	ITEM	AJUSTE DE ENTRADA	AJUSTE DE SALIDA	AJUSTE DEL REPRODUCTOR	PUNTO DE ALINEACIÓN	ALINEACIÓN PARA	FIG.
1	POTENCIA DE LÁSER	–	Aplique la sección del sensor del medidor de potencia óptica al ojetivo captor.	Cortocircuite el n.o 1 y el n.o 2 del CN60 y entre en el modo de prueba. Cortocircuite el n.o 1 y el n.o 3 del CN60. El diode láser emitirá luz. Despues, confirme si se ha visualizado "03". (X28- C/7)	–	Con una potencia de aprox. 0.2mW, cuando la red difractora esté correctamente alineada con el nivel de RF de 1.5Vp-p o más y el nivel de TE (servo abierto) de 1.5Vp-p o más, el captor podrá aceptarse como normal.	(a)
2	EQUILIBRIO DEL ERROR DE ALINEACIÓN	Disco de prueba tipo 4	Conecte un osciloscopio. CH1 : RF (CN52-1) CH2 : TE (CN52-6)	Coloque un disco en la bandeja. Cortocircuite el n.o 1 y el n.o 2 del CN60 y entre en el modo de prueba. Cortocircuite el n.o 1 y el n.o 3 del CN60. Despues, confirmesi se ha visualizado "03".	EQUILIBRIO DEL ERROR DE ALINEACIÓN VR52	Simetría sobre la línea estándar de Vc o DC=0±0.05V.	(b)
3	POLARIZACIÓN DEL ERROR DE ENFOQUE	Disco de prueba tipo 4	Conecte un osciloscopio. CH1 : RF (CN52-1) CH2 : FE (CN52-2)	Cortocircuite el n.o 1 y el n.o 2 del CN60 y entre en el modo de prueba. Cortocircuite el n.o 1 y el n.o 4 del CN60. Despues, confirmesi se ha visualizado "05".	POLARIZACIÓN DEL ERROR DE ENFOQUE VR51	Patrón en ojo máximo y mejor.	(c)
4	GANANCIA DE ENFOQUE	Disco de prueba tipo 4 Aplique una señal de 1kHz/50mV eficaces a las patillas 2 y 3 del CN52.	Conecte un LPF (filtro de paso bajo) a las patillas 2 y 3 del CN52, a las que esté conectado el osciloscopio o dos voltímetros de CA.	Cortocircuite el n.o 1 y el n.o 2 del CN60 y entre en el modo de prueba. Cortocircuite el n.o 1 y el n.o 4 del CN60. Despues, confirmesi se ha visualizado "05".	GANANCIA DE ENFOQUE VR53	Los dos VTVM deberán indicar el mismo valor	(d)
5	GANANCIA DE ALINEACIÓN	Disco de prueba tipo 4 Aplique una señal de 1kHz/50mV eficaces a las patillas 5 y 6 del CN52.	Conecte un LPF (filtro de paso bajo) a las patillas 5 y 6 del CN52, a las que esté conectado el osciloscopio o dos voltímetros de CA.	Cortocircuite el n.o 1 y el n.o 2 del CN60 y entre en el modo de prueba. Cortocircuite el n.o 1 y el n.o 4 del CN60. Despues, confirmesi se ha visualizado "05".	GANANCIA DE ALINEACIÓN VR54	Los dos VTVM deberán indicar el mismo valor	(e)

(NOTA) Disco de tipo 4 : SONY YEDS-18 TEST DISC o equivalente.
LPF : Unos 47kΩ+390pF más o menos

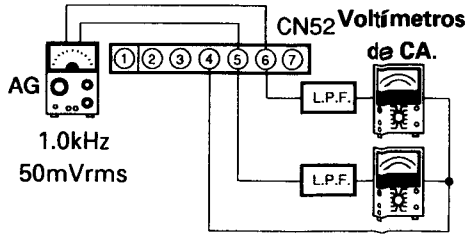
(a) Potencia de láser



(d) Ganacia de enfoque

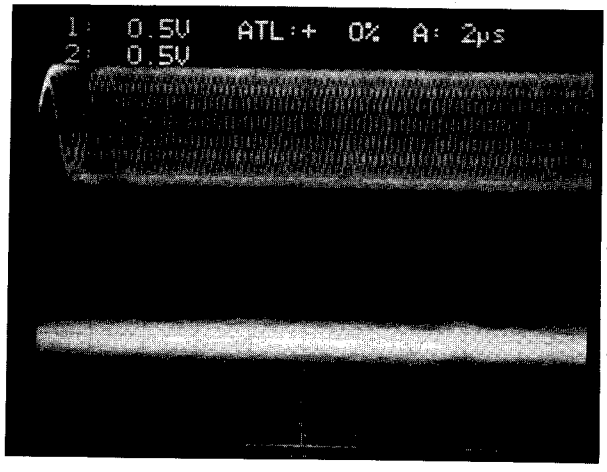


(e) Ganacia de alineación



ADJUSTMENT

On portable CD player and CD player, if connect the test measurements to Vc (Standard voltage) terminal, it is not connected to other test measurements.



CH1
RF signal

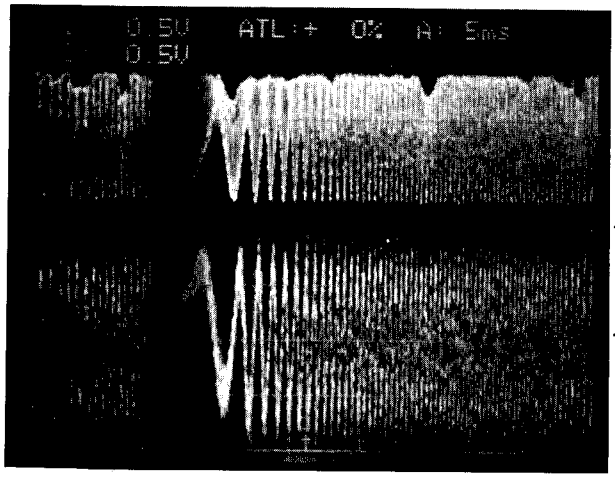
←Vc (2.5V)

←Vc (2.5V)

CH2
TE siganl

16µs

- RF signal and E.Spot signal in test mode (PLAY).
- If the diffraction grating has been adjusted properly, the influence of triggering is observed on the E.Spot waveform of appox. 16µs after RF signal, in the form of a projection.



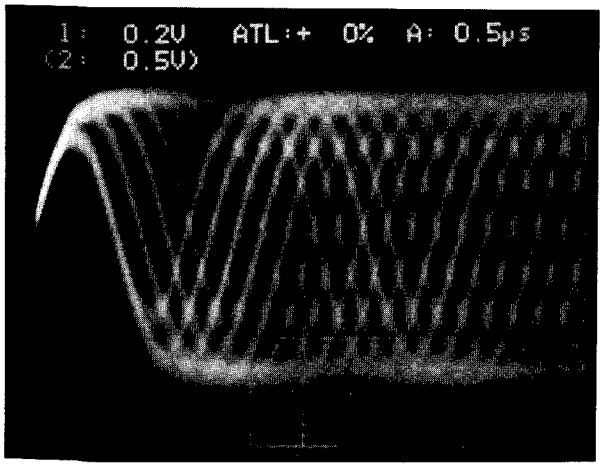
CH1
RF signal

←Vc (2.5V)

←Vc (2.5V)

CH2
TE signal

- RF signal and T.Error signal; in test mode (Focusing ON). (Disc type 4)

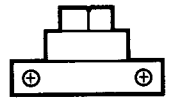


RF signal

- RF signal in test mode (PLAY).

ADJUSTMENT

Preparation for adjustment (Cassette deck)

NO.	ITEM	INPUT SETTING	OUTPUT SETTING	CASSETTE TAPE DECK SETTING	ALIGNMENT POINTS	ALIGN FOR	FIG.
Unless otherwise specified, set the respective switches as follows :							**0dBs=0.775V**
TAPE : NORMAL DOLBY : OFF							
I. Cassette mechanism unit (Adjustment of the REC/PLAY head)							
[1]	DEMAGNETIZATION AND CLEANING	–	–	Power : OFF Demagnetization, cleaning, PLAY UNIT (X-ME5) Short 2 pin and 5 pin of CN9. STOP : Short 3 pin and 5 pin of CN9.	Recording head, erase head, capstan,pinch roller	Demagnetize the REC/PLAY head with the head eraser. Clean the REC/PLAY head, erase head, capstan and pinch roller using a cotton swab slightly damped with alcohol.	
[2]	AZIMUTH OF THE REC/PLAY HEAD	SCC-1727 TCC-153 MTT-114 10kHz, –10dB	–	PLAY UNIT (X-ME5) Short 2 pin and 5 pin of CN9. STOP : Short 3 pin and 5 pin of CN9.	 FWD RVS	Adjust the output to maximum and adjust the azimuth adjustment screw for the Lissajous waveform pattern of the oscilloscope to become close to a 45° straight line.	
II. PC board adjustment	**(Note) Carry out the double speed adjustment in the first place.**						
<1>	TAPE SPEED (HIGH SPEED)	TCC-110 MTT-111 SCC-1727 3kHz	–	* (1) TEST 1 MODE (2) SYNCRO TEST MODE	VR2 (A) VR4 (B)	Adjust the tape speed so that 6kHz is obtained at the center of the tape.	
<2>	TAPE SPEED (NORMAL)				VR1 (A) VR3 (B)	Adjust the tape speed so that 3kHz is obtained at the center of the tape.	

* Before turning on the power for the unit (X-ME5) independently in the TEST 1 mode or SYNCHRO TEST mode, make the following connection.
  Connect AC16V (No. 7 or 8) and D17 (ANODE) of (X28)(A/7).

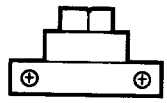
1. TEST 1

- System (A-E5+X-ME5) :
  Shorting the No. 4 pin to the No. 3 pin by a diode (Direction : No. 4 →|– No. 3), press the POWER key of the receiver (A-E5).
  Press the FF key during FWD playback→HI SPEED
  Press the REW key during HI SPEED playback→NORMAL
- Unit (X-ME5) :
  Shorting the No. 4 pin to the No. 3 pin by a diode (Direction : No.4 →|– No. 3), turn on the POWER switch of the power supply jig.
  HI SPEED : Short No. 2 and No. 6 pins of CN9 to each other.
  NOR SPEED : Short No. 1 and No. 6 pins of CN9 to each other.
  STOP : Short No. 3 and No. 5 pins of CN9 to each other.

2. Synchronization test mode (KSJ-0816)

(1)	Enter	E040H→Synchronization test ON state.	
(2)	A Deck : FWD PLAY	E010H	
(3)	A Deck : HI-SPEED	E018H	VR2 6kHz
(4)	A Deck : NORMAL	E017H	VR1 3kHz
(5)	A Deck : STOP	E014H	
(6)	B Deck : NORMAL	E020H	
(7)	B Deck : HI SPEED	E028H	VR4 6kHz
(8)	B Deck : NORMAL	E027H	VR3 3kHz
(9)	B Deck : STOP	E024H	
(10)	DECK SYNCHRO TEST OFF	E041H	

ADJUSTES

Núm.	ÍTEM	AJUSTES DE ENTRADA	AJUSTES DE SALIDA	AJUSTES DEL DECK DE CASETES	PUNTOS DE ALINEACIÓN	ALINEACIÓN PARA	FIG.
A menos que se especifique lo contrario, el ajuste de los controles respectivos es el siguiente: **CINTA: NORMAL, DOLBY: DESACTIVADO**							**0dBs=0.775V**
I. UNIDAD DEL MECANISMO DEL CASETE		**(Adjuste de la cabeza grabadora/reproductora [REC/PLAY] .)**					
[1]	DESMAGNETIZACIÓN Y LIMPIEZA	–	–	ALIMENTACIÓN : DESCONECTADA Limpieza, Desmagnetización, Reproducción Modo de unidad (X-ME5) Cortocircuite el n.o 5 y el n.o 2 del CN9. Parada : Cortocircuite el n.o 3 y el n.o 5 del CN9.	Cabeza grabadora Cabeza borradora Eje de arrastre Rodillo compresor	Desmagnetice la cabeza Grabadora/Reproductora con el borradora de cabezas. Limpie la cabeza Grabadora/ Reproductora, cabeza borradora, eje de arrastre, y rodillo compresor utilizando un palillo de cabeza de algodón Ligeramente humedecido en alcohol.	
[2]	ACIMUT DE LA CABEZA GRABADORA/ REPRODUCTORA	SCC-1727 TCC-153 MTT-114 10kHz, –10dB	–	REPRODUCCIÓN Modo de unidad (X-ME5) Cortocircuite el n.o 5 y el n.o 2 del CN9. Parada : Cortocircuite el n.o 3 y el n.o 5 del CN9.	 FWD RVS	Ajuste la salida al nivel máximo, y gire el tornillo de ajuste del acimut hasta que el patrón de forma de onda de lissajous del osciloscopio se acerque a una línea recta de 45°.	
II. Ajuste de la tarjeta de circuito impreso		**Nota : Realice en primer lugar el ajuste de velocidad doble.**					
<1>	VELOCIDAD DE LA CINTA (ALTA VELOCIDAD)	TCC-110 MTT-111 SCC-1727 3kHz	–	* (1) Modo 1 de prueba (2) Mode de prueba de sincronización	VR2 (A) VR4 (B)	Ajuste la velocidad dela cinta de forma que la señal de 6kHz se produzca en el centro de la cinta.	
<2>	VELOCIDAD DE LA CINTA (NORMAL)				VR1 (A) VR3 (B)	Ajuste la velocidad dela cinta de forma que la señal de 3kHz se produzca en el centro de la cinta.	

* Antes de conectar la alimentació de la unidad (X-ME5), independientemente del modo de prueba (TEST 1) o del modo de prueba sincronizada (SYNCHRO TEST), realice la conexión siguiente.
Conecte AC16V (núm. 7 u 8) y D17 (ÁNODE) de (X28 : A/7).

1. Prueba (TEST 1)

- Sistema (A-E5+X-ME5) :
  Cortocircuite las patillas n.o 4 y n.o 3 con un diode (Séntido : N.o 4 →|– N.o 3), y presione el botón POWER del receptor (A-E5).
  Presione el botón FF durante la reproducción progresiva (FWD)→Alta velocidad (HI SPEED)
  Presione el botón REW durante la reproducción a alta voelocidad (HI SPEED)→Reproducción normal (NORMAL)
- Unidad (X-ME5) :
  Cortocircuite las patillas n.o 4 y n.o 3 con un diode (Sentido : N.o 4 →|– N.o 3), y ponga en ON el interruptor POWER de la fuente de alimentación.
  HI SPEED (alta velocidad) : Cortocircuite las patillas n.o 2 y n.o 6 del CN9.
  NOR SPEED (velocidad normal) : Cortocircuite las patillas n.o 1 y n.o 6 del CN9.
  STOP (parada) : Cortocircuite las patillas n.o 3 y n.o 5 del CN9.

2. Modo de prueba de sincronización (KSJ-0816)

(1)	Introduzca	E040H→Estado de prueba de sincronización	
(2)	Deck-A : Reproducción progresiva	E010H	
(3)	Deck-A : Velocidad alta	E018H	VR1 6kHz
(4)	Deck-A : Normal	E017H	VR3 3kHz
(5)	Deck-A : Parada	E014H	
(6)	Deck-B : Normal	E020H	
(7)	Deck-B : Velocidad alta	E028H	VR2 6kHz
(8)	Deck-B : Normal	E027H	VR4 3kHz
(9)	Deck-B : Parada	E024H	
(10)	Desactivación del modo de prueba de sincronización del deck	E041H	

ADJUSTMENT

Manual adjustment : Unit (X-ME5)

● Lit (ON) X (OFF)

	STEPS OF PROCEDURE	OPERATION	CN9 (X28) SETTING (Shorted)	A REEL LED		B REEL LED	
				L SIDE	R SIDE	L SIDE	R SIDE
1	Turn the power OFF.						
2	Short circuit TP4 —▶|— TP5 with diode, and then turn the power ON.			●	X	●	X
3	Enter TCC-130 in DECK A and playback.	FWD	Pin 2 and 5				
4	DECK A Lch level adjustment. Adjust the output level to –1dBs. (TCC-130/MTT-150 (200nwb/m) –1dBs (690mV); MTT-256U (250nwb/m) 0dBs; MTT-256 (160nwb/m) –4dBs.) *When using 160nwb/m or 250nwb/m tape, adjust to –4dB and 0dB respectively.	UP : DOWN :	Pin 4 and 6 Pin 3 and 6				
5	Change of adjustment items. DECK A Rch level adjustment. Adjust the output level to –1dBs.	UP/DOWN : STOP :	Pin 2 and 7 Same as No. 4 Pin 3 and 5	●	X	X	●
6	Enter TCC-130 in DECK B and change of adjustment items. DECK B Lch level adjustment. Adjust the output level to –1dBs.	PLAYBACK : UP/DOWN :	Pin 2 and 7 Pin 2 and 5 Same as No. 4	X	●	●	X
7	Change of adjustment items. DECK B Rch level adjustment. Adjust the output level to –1dBs.	UP/DOWN : STOP :	Pin 2 and 7 Same as No. 4 Pin 3 and 5	X	●	X	●
	As the PLAY/REC select IC is on the PLAY side even during recording in the manual adjustment mode, the play back or recording monitor is output from the deck. Due to this connect AG output to JIG (PS-93UA or PS-94UA). – REC adjustment –						
8	Load the tape to recorded in the DECK B (TCC-106A). Change of adjustment items. Lch REC level adjustment. Start the recording, and adjust AG for the output to become –10dBs. Play the recorded tape back, and make sure that the 1kHz output is –10dBs. Adjust the output to –10dBs.	REC STOP : REW : FF : FWD : UP : DOWN :	Pin 2 and 7 Pin 4 and 5 Pin 3 and 5 Pin 1 and 6 Pin 2 and 6 Pin 2 and 5 Pin 4 and 6 Pin 3 and 6	●	●	●	X
9	Change of adjustment items. Rch REC level adjustment. Adjust AG to obtain –10dBs. Play the recorded tape back, verify whether the output is –10dBs, and make the required adjustment.	REC THROUGH DOWN	Pin 2 and 7 Same as No.8	●	●	X	●
10	Change of adjustment items. Lch BIAS adjustment (Adjust AG for the output to become –20dBs). Record 1kHz/10kHz alternately. Make the required adjustment for the playback outputs of 1kHz/10kHz to become the same.	REC THROUGH DOWN	Pin 2 and 7 Same as No.8	X	X	●	X
11	Change of adjustment items. Rch recording BIAS adjustment. Record 1kHz/10kHz alternately, and carry out the required adjustment for the playback outputs to become the same.	REC THROUGH DOWN	Pin 2 and 7 Same as No.8	X	X	X	●
12	Send data to the E²PROM.		Pin 4 and 7				
13	*Reset the adjustment mode by turning the power OFF.		Pin 1 and 7				

*If the pin No. 1 and No.7 of CN9 are shorted to each other, TEST 1 is selected.

ADJUSTMENT

Manual adjustment : System (A-E5 + X-ME5)

● Lit (ON) X (OFF)

	STEPS OF PROCEDURE	A REEL LED		B REEL LED	
		L SIDE	R SIDE	L SIDE	R SIDE
1	Turn the power OFF.				
2	Short circuit TP4 —▶|— TP5 with diode, and then turn the power ON.	●	X	●	X
3	Enter TCC-130 in DECK A and PLAY.				
4	DECK A Lch level adjustment. Same as in the case of P.B SKIP DOWN ⏮ (DOWN) SKIP UP ⏭ (UP) Adjust the output level to –1dBs by [SKIP UP/DOWN] key. TCC-130 200nwb/m –1dBs (690mV) 250nwb/m 0dBs 160nwb/m –4dBs *When using 160nwb/m or 250nwb/m tape, adjust to –4dB and 0dB respectively.				
5	Push the [DOLBY NR] key. Adjust the DECK A Rch level.	●	X	X	●
6	Push the [DOLBY NR] key. Enter TCC-130 in DECK B, and PLAY. Adjust the DECK B Lch level.	X	●	●	X
7	Push the [DOLBY NR] key. Adjust the DECK B Rch level.	X	●	X	●
	As the PLAY/REC select IC is on the PLAY side even during recording in the manual adjustment mode, the playback or recording monitor is output from the deck. Due to this, connect W85 and W86 of the AG output and input the recording. –REC adjustment–				
8	Push the [DOLBY NR] key. Lch REC level adjustment. Load the tape to be recorded in the DECK B (TCC-106A). Connect AG (1kHz) with W85. Push the [REC] key to start the recording, and adjust AG for the output to become –10dBs. Play the recorded tape back, and make sure that the 1kHz output is –10dBs. SKIP DOWN ⏮ (DOWN) SKIP UP ⏭ (UP) Adjust the output to –10dBs by means of the [UP/DOWN] key. (Each stop corresponds to a change of approximately 0.2dBs.)	●	●	●	X
9	Push the [DOLBY NR] key. Rch REC level adjustment. Connect AG (1kHz) with W86. Push the [REC] key, and adjust AG to obtain –10dBs. Play the recorded tape back, verify whether the output is –10dBs, and make the required adjustments.	●	●	X	●
10	Push the [DOLBY NR] key. Lch BIAS adjustment. Connect AG (–20dBs) with W85 and record 1kHz/10kHz alternately. Make the required adjustment with the [SKIP UP/DOWN] key for the playback outputs of 1kHz/10kHz to become the same.	X	X	●	X
11	Push the [DOLBY NR] key. Rch recording BIAS adjustment. Connect AG with W86, record 1kHz/10kHz alternately, and carry out the required adjustment with the [SKIP UP/DOWN] key for the playback outputs to become the same.	X	X	X	●
12	Push the [HIGH DUBB] key. (Send data to the E²PROM).				
13	*Reset the adjustment mode by turning the power OFF or push [CCRS/CRLS] key.				

*If the [CCRS/CRLS] key is pressed, TEST 1 is selected.

ADJUSTMENT

PB level, REC level adjustment : Unit (X-ME5), System (A-E5+X-ME5)

• In the case of automatic adjustment (Self adjustment)

● Lit (ON) ○ FLICKERING X (OFF)

	STEPS OF PROCEDURE	ADJUSTMENT RESULT	LED INDICATION STATE				DISPLAY
			A REEL LED		B REEL LED		(System
			L SIDE	R SIDE	L SIDE	R SIDE	only)
1	Turn the power OFF.	Under adjustment	X	X	X	X	TAPE
2	Enter TCC-130 in DECK A and DECK B.	PB CALB Lch ERROR	○	X	○	○	PCLL
3	Short circuit TP4 TP6 with diode and turn the power ON.	PB CALB Rch ERROR	X	○	○	○	PCLR
	(The operation starts automatically.)	A PB Lch ERROR	○	X	○	X	APBL
4	DECK A playback level adjustment.	A PB Rch ERROR	○	X	X	○	APBR
5	DECK B playback level adjustment.	B PB Lch ERROR	X	○	○	X	BPBL
6	Turn the power OFF.	B PB Rch ERROR	X	○	X	○	BPBR
7	Enter TCC-106A in DECK B.	REC CALB Lch ERROR	○	X	X	X	RCLL
8	Short circuit TP4 ⟶⊣ TP6 with diode and turn the power ON.	REC CALB Rch ERROR	X	○	X	X	RCLR
	(The operation starts automatically.)	B REC Lch ERROR	○	○	○	X	BRCL
9	Recording level adjustment.	B REC Rch ERROR	○	○	X	○	BRCR
10	Recording bias adjustment.	B BIAS Lch ERROR	X	X	○	X	BBSL
11	The adjustment is finished when the 4 light emitting diodes (LED) of	B BIAS Rch ERROR	X	X	X	○	BBSR
*	REEL are lit. The operation mode returns to normal when the power is	PB ALL OK	●	●	X	X	PB
	turned OFF or when the CCRS/CRLS key is pushed. (System)	REC ALL OK	X	X	●	●	REC
	Turn the power OFF or short pin 1 and pin 7 of CN9. (Unit)	ALL OK	●	●	●	●	ALL

When starting the self-adjustment of the unit (X-ME5).
Connect AC16V (No.7 or No.8) and D17 (ANODE) of (X28 : A/7).

*If the [CCRS/CRLS] key is pressed or No.1 and No. 7 of CN9 are shorted to each other, TEST 1 is selected.

X-ME5

ADJUSTMENT

Manual adjustment mode

- **Setting**

· System (A-E5+X-ME5)
Shorting the No.4 pin to the No.5 pin by a diode (Direction : No.4 →|← No.5), press the [POWER] key of the receiver (A-E5).

· Unit (X-ME5) :
Shorting the No.4 pin to the No.5 pin by a diode (Direction : No.4 →|← No.5), turn on the POWER switch of the power supply jig.

- **Resetting**

· System (A-E5+X-ME5)
Press the [CCRS/CRLS] key or [POWER] key to turn off the power.

· Unit (X-ME5) :
Turn off the power switch of the power supply jig or short No.1 of CN9 to No.7.

* If the [CCRS/CRLS] key is pressed or No.1 and No.7 of CN9 are shorted to each other, TEST 1 is selected.

Adjustable items and adjusting procedure

- **Manually adjustable items**

· Playback level of A-deck (L, R)
· Playback level of B-deck (L, R)
· Recording equalizer of B-deck (L, R)
· Recording bias of B-deck (L, R)

- **Contents and procedure of adjustment**

(1) Adjustment of playback level of Lch of A-deck
(2) Adjustment of playback level of Rch of A-deck
(3) Adjustment of playback level of Lch of B-deck
(4) Adjustment of playback level of Rch of B-deck
(5) Adjustment of recording level of Lch of B-deck
(6) Adjustment of recording level of Rch of B-deck
(7) Adjustment of recording bias of Lch of B-deck
(8) Adjustment of recording bias of Rch of B-deck

Allotment of keys

	KS0 <5 pin>	KS1 <6 pin>	KS2 <7 pin>
KR0 <3 pin>	STOP	Lowering of adjustment value (⏮)	Deletion of each adjustment item (N/DUBB)
KR1 <2 pin>	TAPE	FF	Change of adjustment item (DOLBY)
KR2 <1 pin>	A/B	RWD	Resetting 'TEST 1 (CCRS/CRLS)
KR3 <4 pin>	REC	Upper of adjustment (⏭)	Saving of all adjustment items (H/DUBB)

< > : CN9 (X28 : A/7)
( ) : Keys of receiver used in normal mode

When performing this operation, press the keys of the receiver having the names of the above keys used in the normal mode.

For example, since the [dolby] key is used as the key for change of adjustment item in the normal mode, the [DOLBY] key of the receiver is used for this purpose.

Since data cannot be output in series for the adjustment in the system mode, the adjustment value is indicated by the counter of the receiver. Set the selector of the receiver to TAPE at this time, however.

* In the unit mode, short the pins of CN9.
(Examples) :
· For change of an adjustment item, short No. 2 and No. 7 of CN9 to each other.
· For heightening of an adjustment value, short No. 4 and No. 6 of CN9 to each other.
· For lowering of an adjustment value, short No. 3 and No. 6 of CN9 to each other.

ADJUSTMENT

Operation

- If the power is turned on with the test pin jumper shorted, the A PB Lch data are set.
  At this time, the value currently written in the E²PROM is read as each adjustment data. The adjustment OK/ERR condition is also read (only when the normal data are written).
  Besides, all the adjustment finish conditions are turned off and all the backup check data are broken.
  If the adjustment data for an item is not written, the center value is read.

- Select an item to be adjusted with the [DOLBY] key, and heighten or lower the adjustment value with the [SKIP UP/SKIP DOWN] keys.
  If in the unit mode, the adjustment value of the currently adjusted item is output in series.
  If in the system mode, the adjustment value of the currently adjusted item is indicated.

Explanation of keys

- [N/DUBB] key : Deletion of each adjustment item
  Used to initialize only the adjustment value of the currently adjusted item.
  A, B PB value→30
  B REC EQ value→15
  B BIAS value→40
  * Unit mode : Short No. 3 and No. 7 of CN9 to each other.

- [H/DUBB] key : Writing of all adjustment items
  Used to transfer all the currently adjusted data to the E²PROM write in it, so that they can be backed up.
  Also used to complete the adjustment in each mode and back it up.
  If this key is pressed during the manual adjustment, when the machine is turned on in the normal mode or test mode next time, the adjustment data are read out of the E²PROM.
  * Unit mode : Short No. 4 and No. 7 of CN9 to each other.
  After the adjustment, if the manual adjustment is reset without pressing this key, when the machine is turned on in the normal mode or test mode next time, the initial values are read since the backup check data have not been written.

- [DOLBY] key : Cyclic change of adjustment item
  Used to change the currently adjusted item cyclically.
  * Unit mode : Short No. 2 and No. 7 of CN9 to each other.

→[A PB Lch]→[A PB Rch]→[B PB Lch]→[B PB Rch]→
↑ ↓
←[B BIAS Rch]←[B BIAS Lch]←[B REC Rch]←[B REC Lch]←

- [SKIP UP/DOWN] key : Heightening and lowering of adjustment value
  Used to heighten and lower the adjustment value of the currently adjusted item.
  UP :
  (Example : 63 step →···→ 15 step →···→ 0 step)
  DOWN :
  (Example : 0 step →···→ 15 step →···→ 63 step)
  Each time the value is changed, the adjustment data conformed to the current operation of the mechanism are transferred to the system IC, then the serial code is output or indicated.
  Adjustment range
  PB : 0~63 step
  REC EQ : 0~31 step
  BIAS : 20~60 step
  * Unit mode
  UP : Short No. 4 and No. 6 of CN9 to each other.
  DOWN : Short No. 3 and No. 6 of CN9 to each other.

- [CCRS] key
  Used to reset the manual adjustment mode.
  * Unit mode : Short No. 1 and No. 7 of CN9 to each other.

- Other keys
  Used for the ordinary operation.

X-ME5

ADJUSTMENT

Automatic adjustment mode of playback system

- **Self-adjustment items**
  · Correction of sensitivity of playback meter amplifier (L, R)
  · Adjustment of playback level of A-deck (L, R)
  · Adjustment of playback level of B-deck (L, R)

- **Contents and procedure of adjustment**
  (1) Correction of sensitivity of meter for adjustment of playback (L, R) : Initial setting
  (2) Adjustment of playback level of L/Rch of A-deck
  Writing of adjustment data of playback of A-deck (When playback of A-deck is finished normally)
  (3) Adjustment of playback level of L/Rch of B-deck
  Writing of adjustment data of playback of B-deck (When playback of B-deck is finished normally)

- **Setting**
  · System (A-E5+X-ME5) :
  Shorting the test pin of (X28) (TP4 →|← TP6) by a diode, press the POWER key of the receiver (A-E5).
  · Unit (X-ME5) :
  Shorting the test pin of (X28) (TP4 →|← TP6) by a diode, press the POWER switch of the power supply jig.

- **Resetting**
  · System (A-E5+X-ME5) :
  Press the [CCRS/CRLS] key or POWER key to turn off the power.
  · Unit (X-ME5) :
  Turn off the POWER switch of the power supply jig or short No. 1 and No. 7 of CN9 (X28).
  * If the [CCRS/CRLS] key is pressed or No. 1 and No. 7 of CN9 (X28) are shorted to each other, TEST 1 is selected.

Starting condition

· Adjustment of playback of A/B-deck
  If the A-deck or B-deck has half, the A-deck or B-deck adjustment mode is accepted.
  Either or both decks having halves are adjusted in the order of A and B.
  Only the deck(s) and only the channel(s) which has (have) not been adjusted is(are) adjusted at this time.
  Normally, if playback of a channel is adjusted, the REC EQ/BIAS are set again in the unadjusted condition.
  If the playback modes of both A- and B-decks have been adjusted, the adjustment is finished without adjusting anything.
  If either deck does not have half, adjustment is judged to be ERR and finished.

- **Key matrix**

	KS0 <5 pin>	KS1 <6 pin>	KS2 <7 pin>
KR0 <3 pin>	–	–	–
KR1 <2 pin>	–	–	DOLBY
KR2 <1 pin>	A/B	–	Resetting →TEST 1
KR3 <4 pin>	–	–	–

< > : CN9 (X28 : A/7)

When performing this operation, press the keys of the receiver having the names of the above keys used in the normal mode.

For example, since the [CCRS/CRLS] key is used as the key for resetting in the normal mode, the [CCRS/SRLS] key of the receiver is used for this purpose.

Since data cannot be output in series for the adjustment in the system mode, the adjustment value is indicated by the counter of the receiver. Set the selector of the receiver to TAPE at this time, however.

Automatic adjustment mode of recording system

- **Self-adjustment items**
  · Correction of sensitivity of recording meter amplifier (L, R)
  · Adjustment of recording level of B-deck (L, R)
  · Adjustment of recording bias of B-deck (L, R)

- **Contents and procedure of adjustment**
  (1) Correction of sensitivity of meter for adjustment of recording (L, R) : Initial setting
  (2) Adjustment of recording level of L/Rch of B-deck
  Writing of adjustment data of recording equalizer of B-deck (When recording of B-deck is finished normally)
  (3) Adjustment of recording bias of L/Rch of B-deck
  Writing of adjustment data of bias of B-deck (When recording of B-deck is finished normally)
  (4) Writing of finish data (When all items are finished normally)

- **Setting**
  · System (A-E5+X-ME5) :
  Shorting the test pin of (X28) (TP4 →|← TP6) by a diode, press the POWER key of the receiver (A-E5).
  · Unit (X-ME5) :
  Shorting the test pin of (X28) (TP4 →|← TP6) by a diode, press the POWER switch of the power supply jig.

X-ME5

ADJUSTMENT

- **Resetting**

· System (A-E5+X-ME5) :
Press the [CCRS/CRLS] key or POWER key to turn off the power.

· Unit (X-ME5) :
Turn off the POWER switch of the power supply jig or short No. 1 and No. 7 of (X28).

* If the [CCRS/CRLS] key is pressed or No. 1 and No. 7 of CN9 (X28) are shorted to each other, TEST 1 is selected.

- **Starting condition**

· Adjustment of playback/recording
If the B-deck has half, the adjustment mode is accepted.
If the recording equalizer has been adjusted, only the bias is adjusted. Only the channel(s) which has(have) not been adjusted is(are) adjusted.
Normally, if the recording equalizer is adjusted, the bias is set in the unadjusted condition.
If both recording equalizer and bias have been adjusted, the adjustment is finished without adjusting anything.
If the B-deck does not have half or its playback has not been adjusted, adjustment is judged to be ERR and finished.

- **Writing after all adjustments are finished**

· Writing of adjustment OK/ERR and outputting of serial data.
After all the adjustments are finished, the operation is stopped and the normal finish is indicated.
The data of the normal finish of the self-adjustment is written in the E2PROM, then the serial code for normal finish (E080H) is output every three seconds.

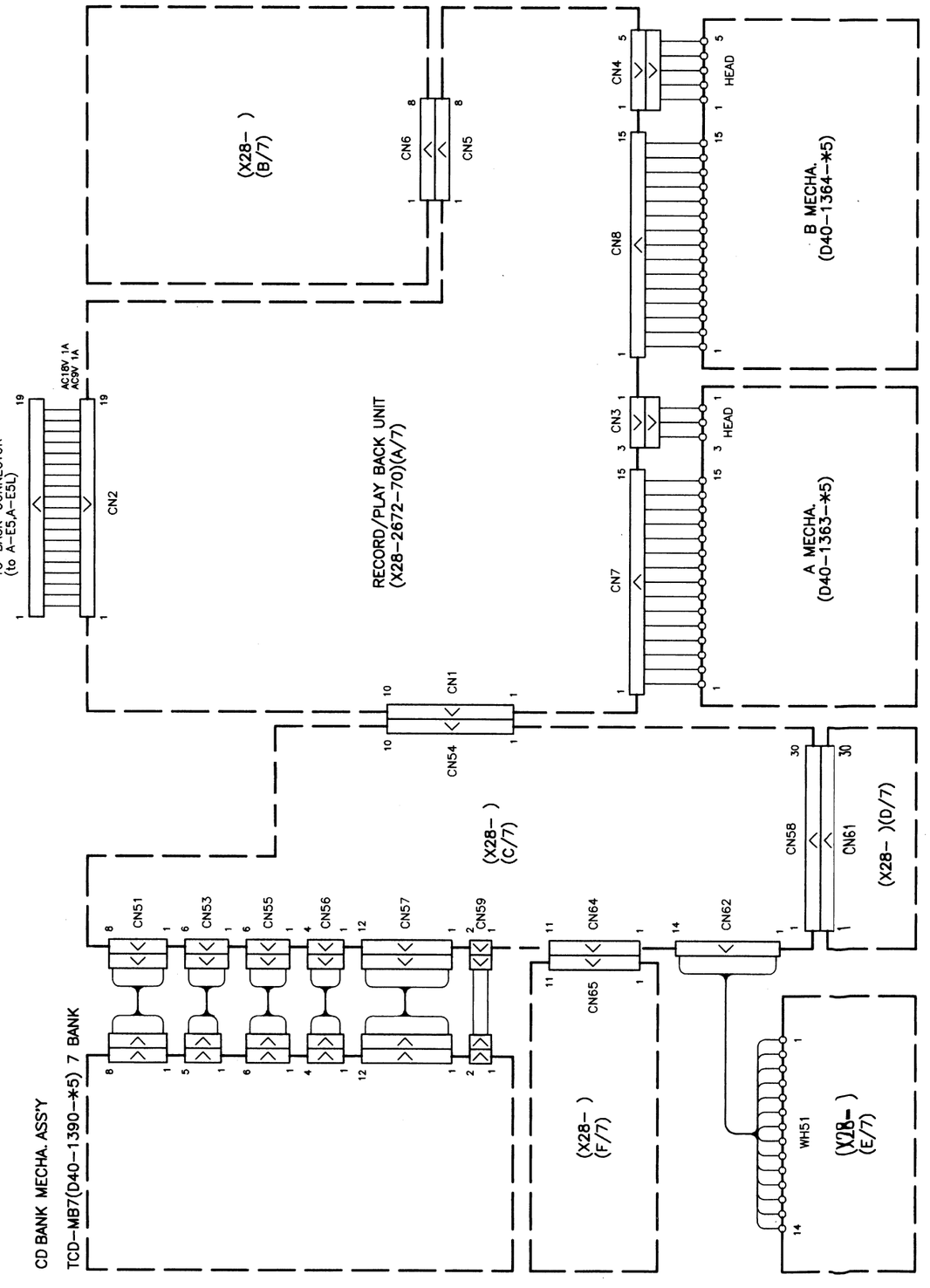
If the adjustment is finished abnormally, the adjustment item having an error is indicated similarly to the above.
The data of the abnormal finish of the self-adjustment and the position where the adjustment stopped are written in the E2PROM, then the serial code of abnormally finished item (E09xH) is output every three seconds.

- **Serial code at automatic adjustment**

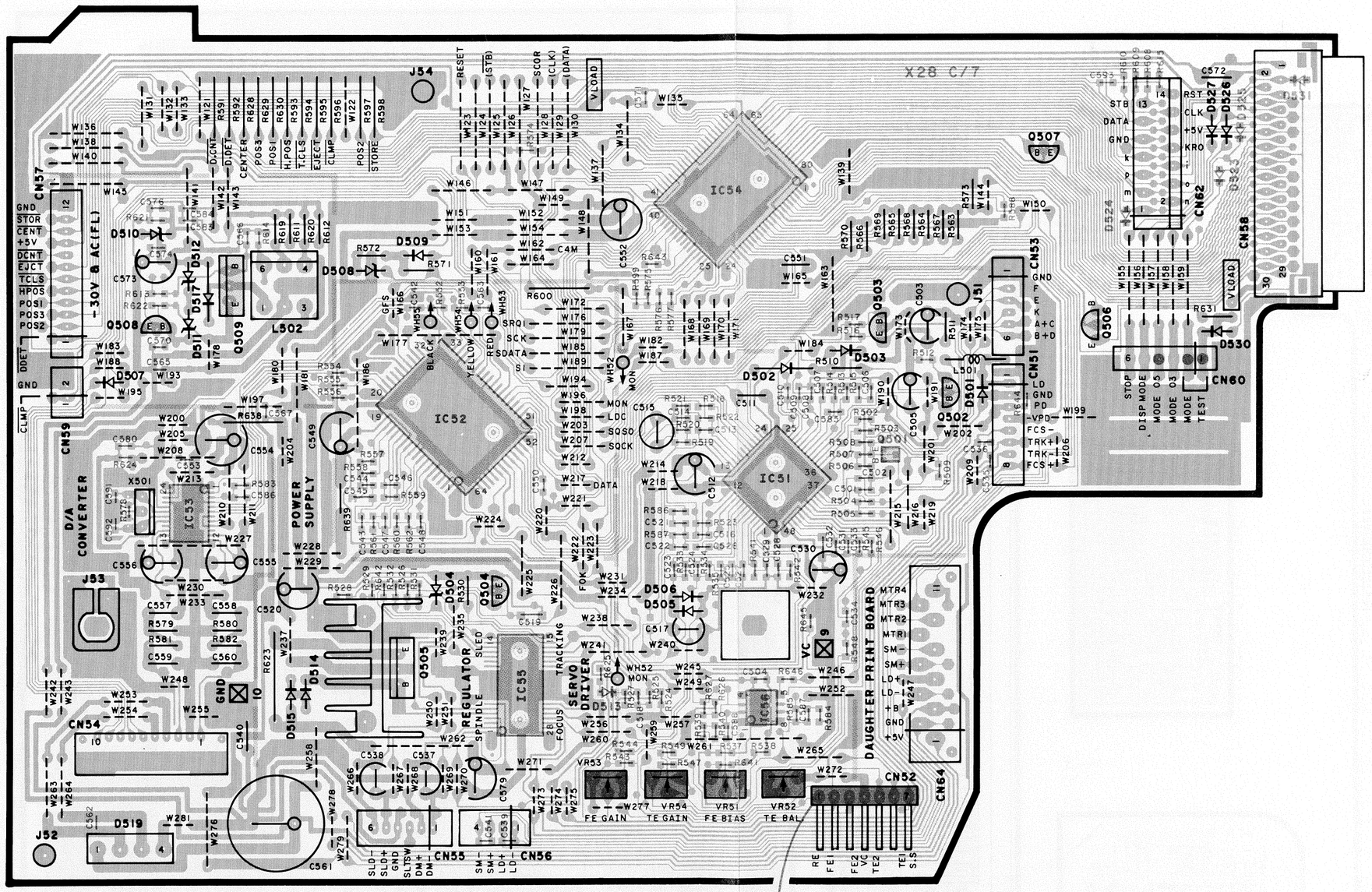
This serial code does not have meaning unless the serial jig is connected. It is output, however, in either system mode or unit mode.

When OK	E080H
A PB Lch ERR	E091H
A PB Rch ERR	E092H
B PB Lch ERR	E097H
B PB Rch ERR	E098H
B REC EQ Lch ERR	E099H
B REC EQ Rch ERR	E09AH
B BIAS Lch ERR	E09BH
B BIAS Rch ERR	E09CH
Correction of sensitivity Lch ERR	E09DH
Correction of sensitivity Rch ERR	E09EH
Adjustment has not been performed yet.	E09FH
Interruption of adjustment (STOP key, etc.)	

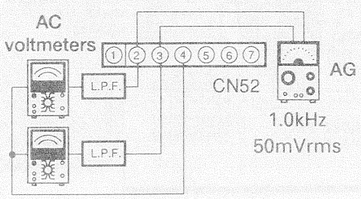
WIRING DIAGRAM



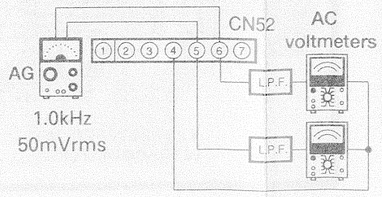
PC BOARD (COMPONENT SIDE VIEW)



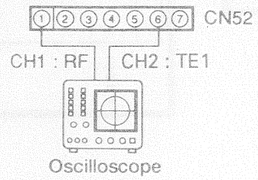
(d) Focus gain :
Two VTVMs should read the same value.



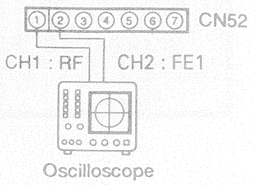
(e) Tracking gain :
Two VTVMs should read the same value.



(b) Tracking error balance :
Symmetry about Vc standard voltage or DC=0±0.05V

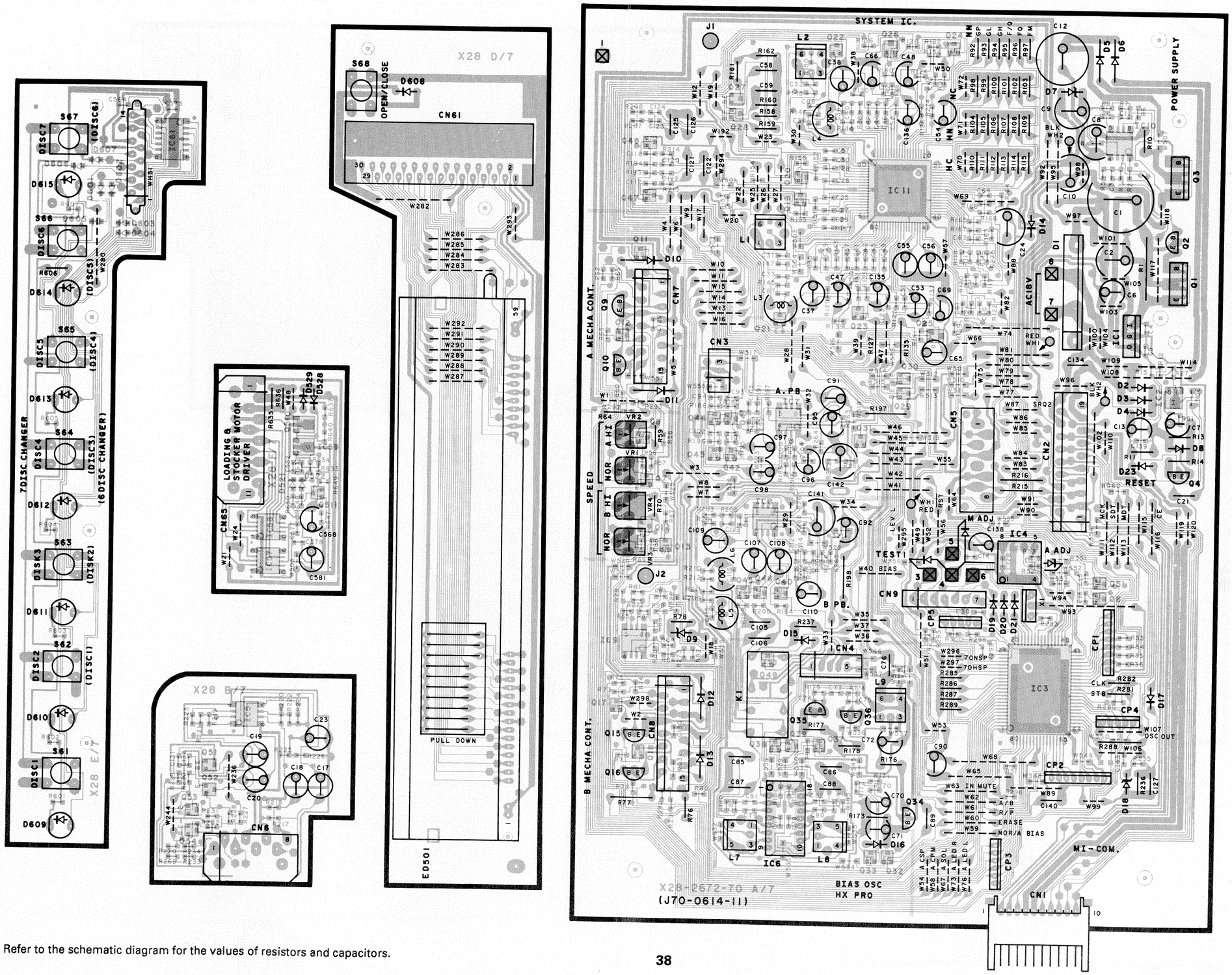


(c) Focus error bias :
Optimum eye pattern

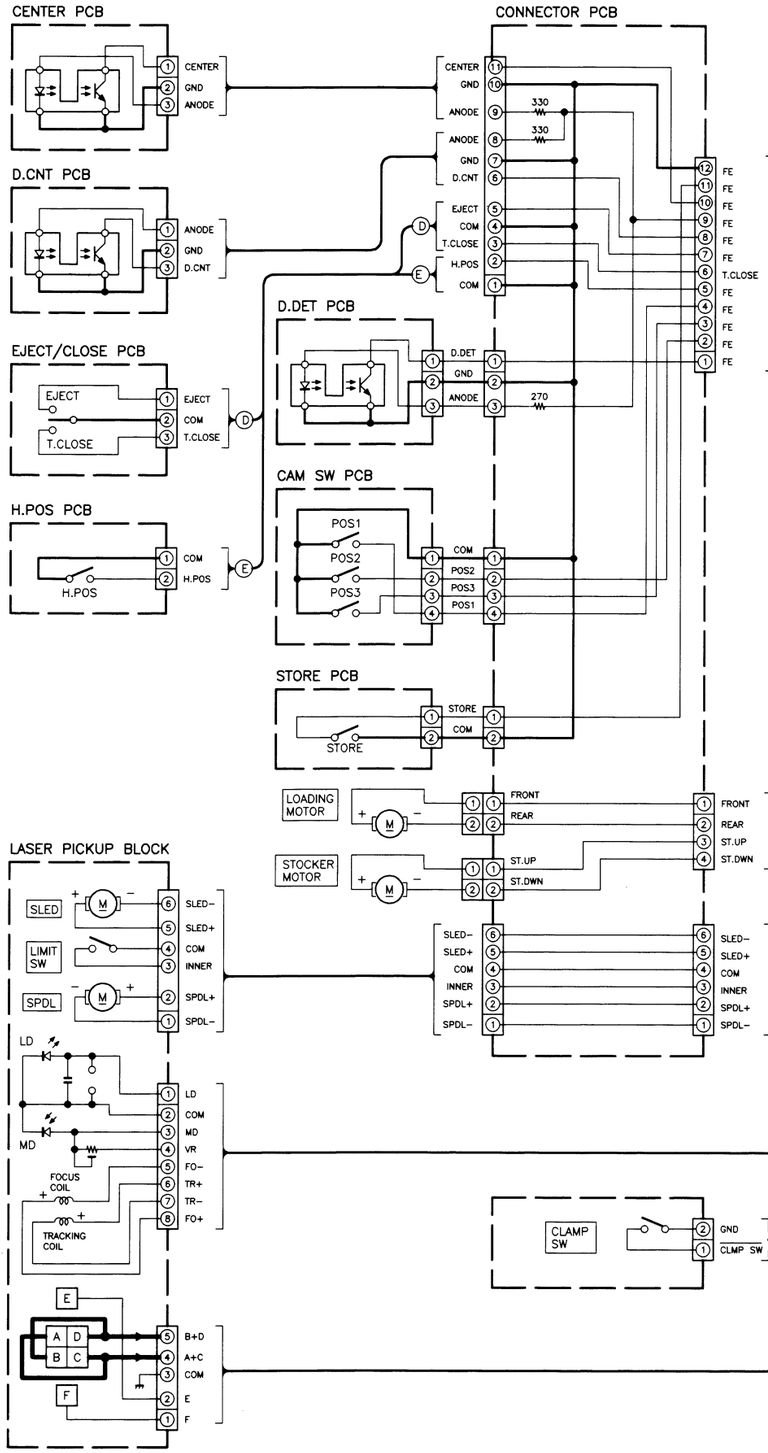


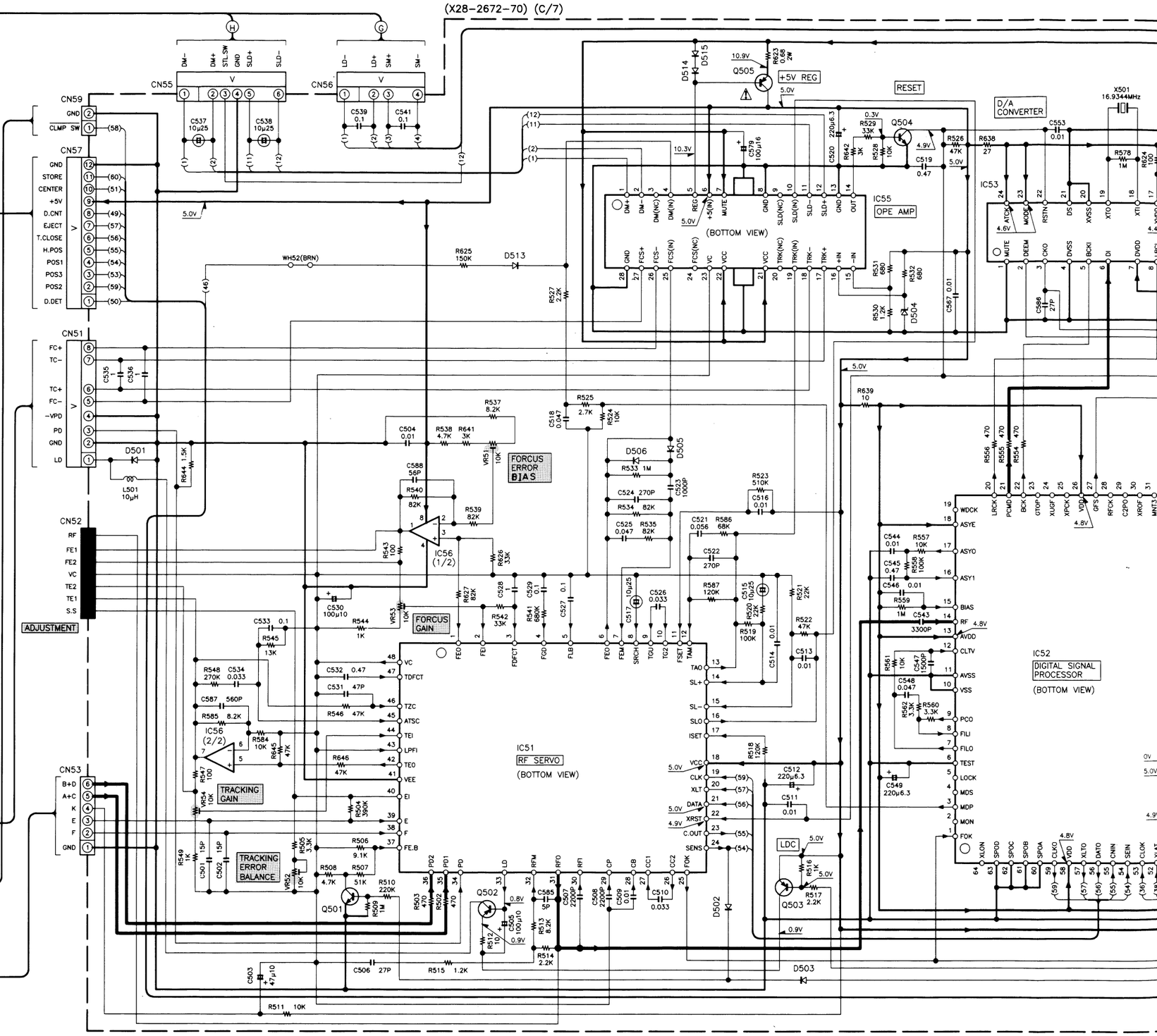
Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (COMPONENT SIDE VIEW)



Refer to the schematic diagram for the values of resistors and capacitors.


CENTER PCB
CENTER
GND
ANODE
D.CNT PCB
ANODE
GND
D.CNT
EJECT/CLOSE PCB
EJECT
COM
T.CLOSE
H.POS PCB
H.POS
CONNECTOR PCB
330
330
270
D.DET PCB
D.DET
CAM SW PCB
POS1
POS2
POS3
STORE PCB
STORE
LOADING MOTOR
FRONT
REAR
STOCKER MOTOR
ST.UP
ST.DWN
LASER PICKUP BLOCK
SLED
LIMIT SW
SPDL
LD
MD
FOCUS COIL
TRACKING COIL
SLED+
SLED−
SPDL+
SPDL−
B+D
A+C
F
CLAMP SW
CLMP SW
FE
T.CLOSE


(X28-2672-70) (C/7)
CN55
CN56
CN59
CN57
CN51
CN52
CN53
ADJUSTMENT
IC55
OPE AMP
(BOTTOM VIEW)
IC56 (1/2)
IC56 (2/2)
IC51
RF SERVO
IC52
DIGITAL SIGNAL PROCESSOR
IC53
D/A CONVERTER
+5V REG
RESET
FORCUS ERROR BIAS
FORCUS GAIN
TRACKING GAIN
TRACKING ERROR BALANCE
LDC
X501 16.9344MHz
WH52(BRN)

J K L M N O P Q R S T

D/A CONVERTER

IC53

X501 16.9344MHz

CN54
10 Rch
9 GND
8 Lch
7 AC (AC9.8V)
6 AC
5 SRQ1
4 SCK
3 SDT
2 Si
1 MRQ1

Q508,509
−30V DC/DC CONVERTER CONTROL

D507

J51 J52 J53 J54

CN64
1 +5V
2 GND
3 +B
4 LD−
5 LD+
6 SM+
7 SM−
8 MOTOR1
9 MOTOR2
10 MOTOR3
11 MOTOR4

X28−A/7 −CN1 3/3 A

X28−F/7 −CN65 2/3 B

CN58
30 NC
29 G1
28 G2
27 G3
26 G4
25 G5
24 G6
23 G7
22 G8
21 G9
20 G10
19 a
18 b
17 f
16 g
15 e
14 c
13 d
12 h
11 j
10 i
9 n
8 m
7 o
6 p
5 l
4 k
3 KR0
2 F2
1 F1

X28−D/7 −CN61 2/3 C

Q506,507
CURRENT BOOSTER
Q506

Q507

IC54
DAC

IC52
DIGITAL SIGNAL PROCESSOR
(BOTTOM VIEW)

CN60
D527
D526
D525
D524
D523
j
i
n
m
o
KR1

CN62
14 RESET
13 STB
12 DATA
11 CLK
10 +5V
9 GND
8 KR0
7 k
6 l
5 p
4 o
3 m
2 n
1 i

X28−E/7 −WH51 2/3 D

TEST POINT

SIGNAL LINE
GND LINE
+B LINE
+B LINE

IC51 :CXA1782BQ
IC52 :CXD2507Q
IC53 :SM5875BM
IC54 :μPD78044AGF−022
IC55 :BA6398FP
IC56 :NJM2100M

D501~503,505,507,509,514,515 :1SS133 or HSS104
D504 :MTZJ2.7(B) or RD2.7ES(B2)
D508 :MTZJ5.1(B) or RD5.1ES(B2)
D510 :MTZJ6.8(B) or RD6.8ES(B2)
D511,512 :MTZJ15(B) or RD15ES(B2)
D513,523~525 :MA113
D517 :1SS92 or 1S954
D519 :KBP02ML−6127
D526,527 :1SS131 or HSS104A

Q501 :2SC4081(R,S)
Q502,503 :2SA954(L,K)
Q504,508 :2SC2785(F,E) or 2SC1740S(Q,R)
Q505 :2SB1370(E,F) or 2SB1375
Q506,507 :DTC113ZS or UN4219
Q509 :2SB1167(R,S) or 2SB1168(R,S)

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

X−ME5(K) (1/3)

Y39-2070-11

X-ME5
KENWOOD

X28-C/7 -CN58 1/3

Ⓒ

(X28-) (D/7)

CN61

S68 OPEN/CLOSE D608

ED501

10G 9G 8G 6G 5G 3G 2G 1G

PGM RANDOM ONE ALL EDIT AI EDIT MULTI EDIT SPACE CCRS A B

DISC NO. REPEAT TRACK NO. P.C. SINGLE TOTAL TIME TIME

S1h

X28-C/7 -CN64 1/3

Ⓑ

X28-C/7 -CN62 1/3

Ⓓ

(X28-) (E/7)

WH51

S61 S62 S63 S64 S65 S66 S67

D601 D602 D603 D604 D605 D606 D607

C564 1

C575 0.01

5.0V

IC61

VDD P2 P1 RST STB CLK DATA

P3 P4 P5 VSS P6 P7 P8

D609 D610 D611 D612 D613 D614 D615

R601 180 R602 180 R603 180 R604 180 R605 180 R606 180 R607 180

(X28-) (F/7)

CN65

MOTOR4 MOTOR3 MOTOR2 MOTOR1 SM- SM+ LD+ LD- +B GND +5V

STKM DRIVER IC57

LDM DRIVER IC58

GND IN2 VCC IN1 GND NC OUT2 VS OUT1 NC

5.0V

C578 0.01 C577 0.01

7.8V

R635 2.2 R636 2.2

Q510

R640 100 R637 100

R632 22K C582 0.1

R634 15K

IC59 VREF GND IN

+8V REGULATOR

D522

D528 D529

10.5V

R633 4.3K

Q511

R647 4.7K

R648 4.7K R649 100K

C581 47µ10

D521

R650 22K

C568 33µ16

5.0V

IC57,58 : LB1638M

IC59 : M5237ML

IC61 : NJU3711M

Q510 : 2SB1308(

Q511 : 2SA1576(

D521,522,601~607 : MA113

D528,529 : 1SS133

D608 : 1SS131

D609~615 : B30-246

ED501 : 10-BT-1

X-ME5(

IC57,58 : LB1638M
IC59 : M5237ML
IC61 : NJU3711M

Q510 : 2SB1308(Q,R)
Q511 : 2SA1576(R,S)

D521,522,601~607
: MA113
D528,529 : 1SS133 or HSS104
D608 : 1SS131 or HSS104A
D609~615 : B30-2462-05

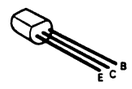
ED501 : 10-BT-147GK

X-ME5(K)(2/3)

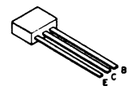
- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

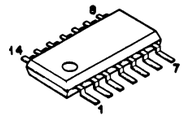
2SA954
2SC3246
2SC3940A



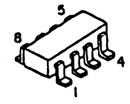
UN4219



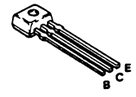
NJU3711M



LB1638M

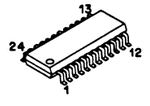


2SC2785

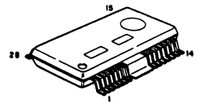


2SB1375
2SD2012

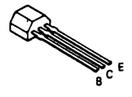
SM5875BM



BA6398FP

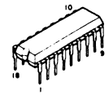


2SC1740S

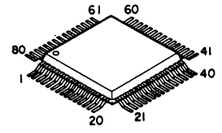


2SB1167
2SB1168

CXD2507Q

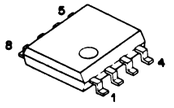


M5237ML

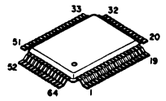


DTA124EU DTC124EU
2SA1576 2SC4081
2SD1757K

NJM4558M
NJM4565MD



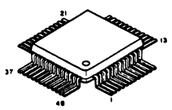
CXA1782BQ

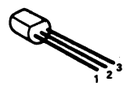


S-80740AL-A4

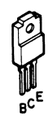
2SB1308

BA17805T
UPC7805AHF



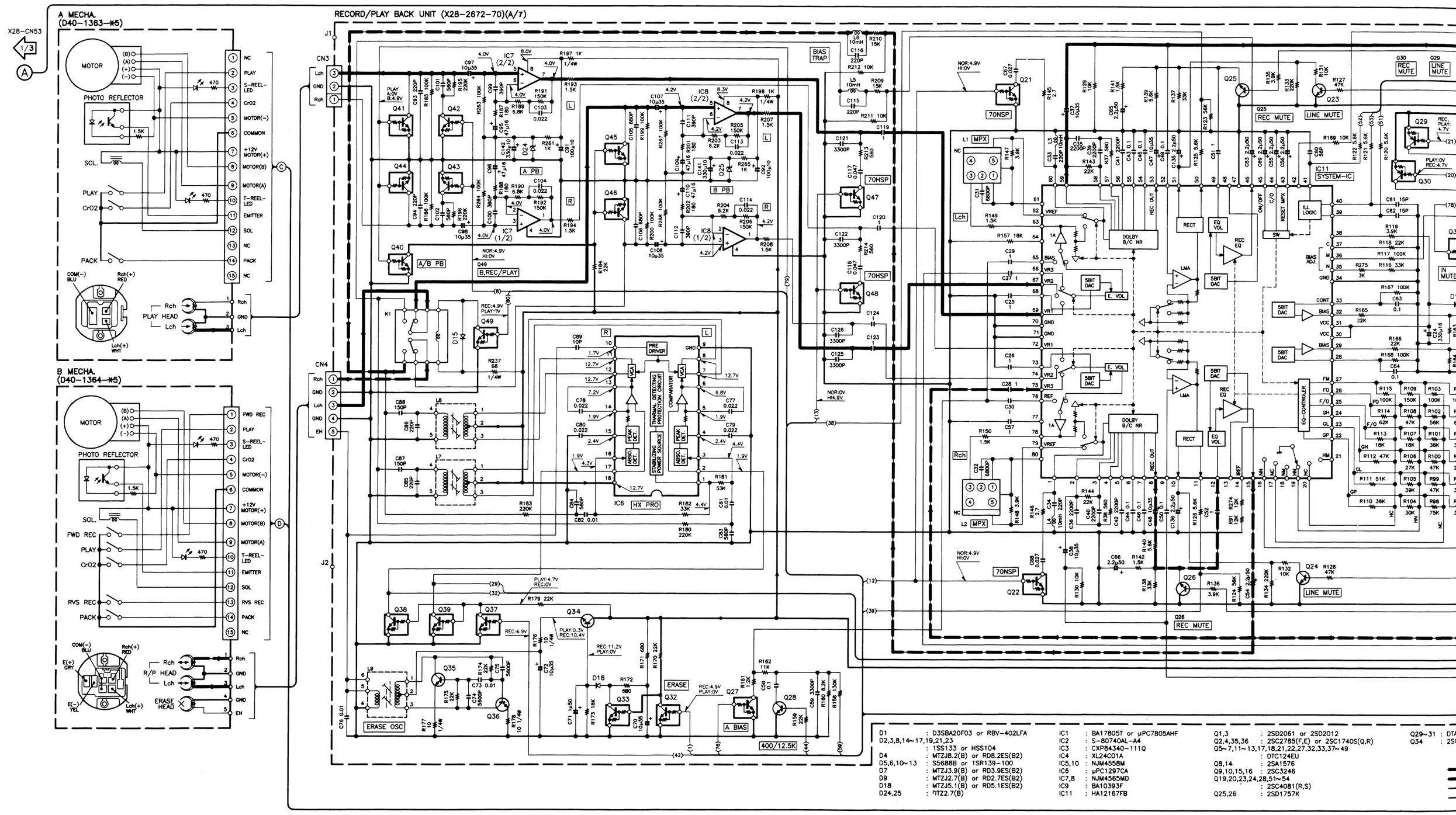


2SB1370
2SD2061



Y39-2070-11

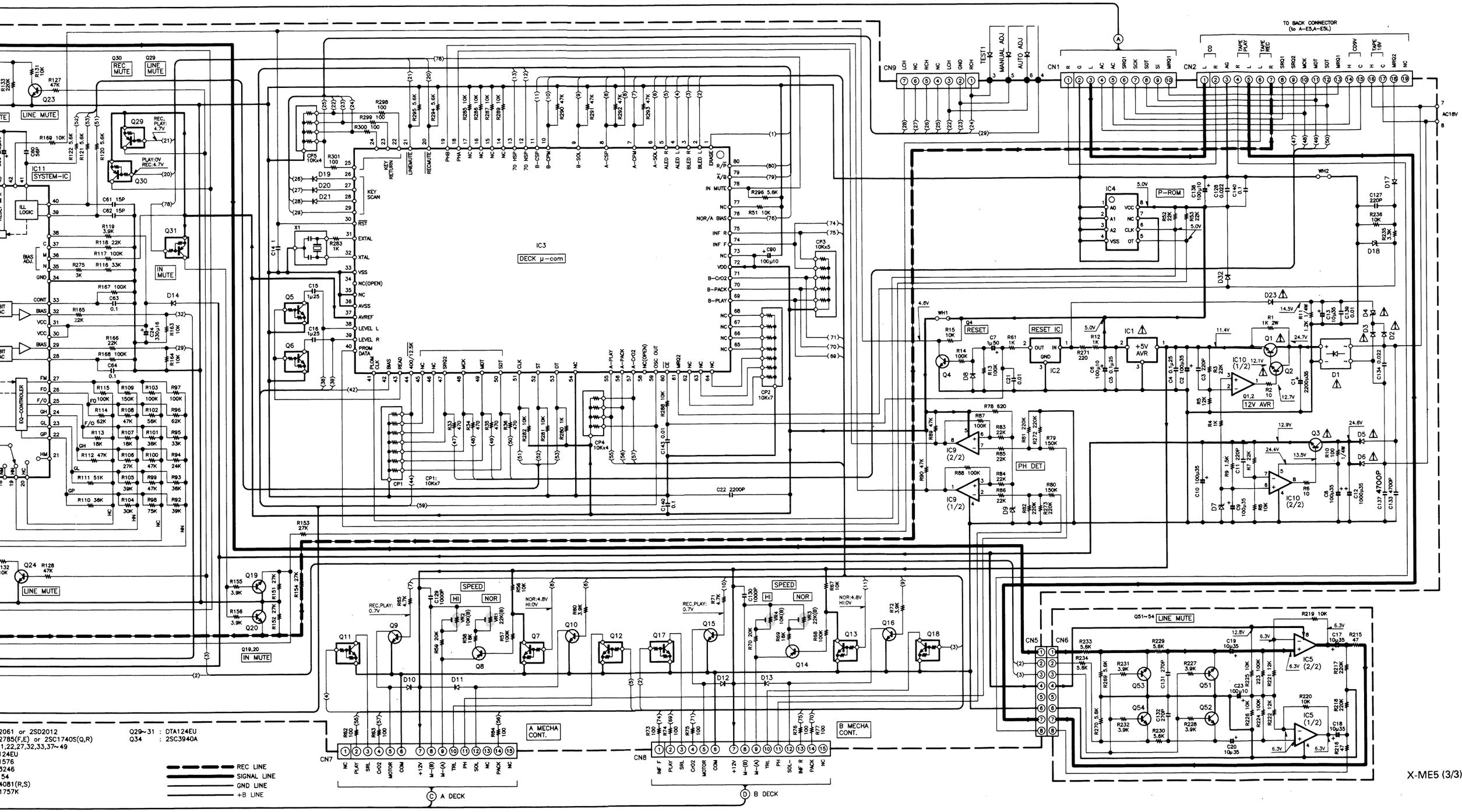
X-ME5
KENWOOD



D1	: D3SBA20F03 or RBV-402LFA	IC1	: BA17805T or μPC7805AHF	Q1,3	: 2SD2061 or 2SD2012	Q29~31	: DTA
D2,3,8,14~17,19,21,23	: 1SS133 or HSS104	IC2	: S-80740AL-A4	Q2,4,35,36	: 2SC2785(F,E) or 2SC1740S(Q,R)	Q34	: 2SC
D4	: MTZJ8.2(B) or RD8.2ES(B2)	IC3	: CXP84340-111Q	Q5~7,11~13,17,18,21,22,27,32,33,37~49	: DTC124EU		
D5,6,10~13	: S568BB or 1SR139-100	IC4	: XL24C01A	Q8,14	: 2SA1576		
D7	: MTZJ3.9(B) or RD3.9ES(B2)	IC5,10	: NJM4558M	Q9,10,15,16	: 2SC3246		
D9	: MTZJ2.7(B) or RD2.7ES(B2)	IC6	: μPC1297CA	Q19,20,23,24,28,51~54	: 2SC4081(R,S)		
D18	: MTZJ5.1(B) or RD5.1ES(B2)	IC7,8	: NJM4565MD	Q25,26	: 2SD1757K		
D24,25	: 9TZ2.7(B)	IC9	: BA10393F				
		IC11	: HA12167FB				

- DC voltages are as measured with a high impedance voltmeter with a cassette loaded at playback mode. Values may vary slightly due to variations between individual instruments or/and units. Bias circuit DC voltages are as measured while in the record mode.

CAUTION: Fo
critical compo
insulated fron
Licensing Co



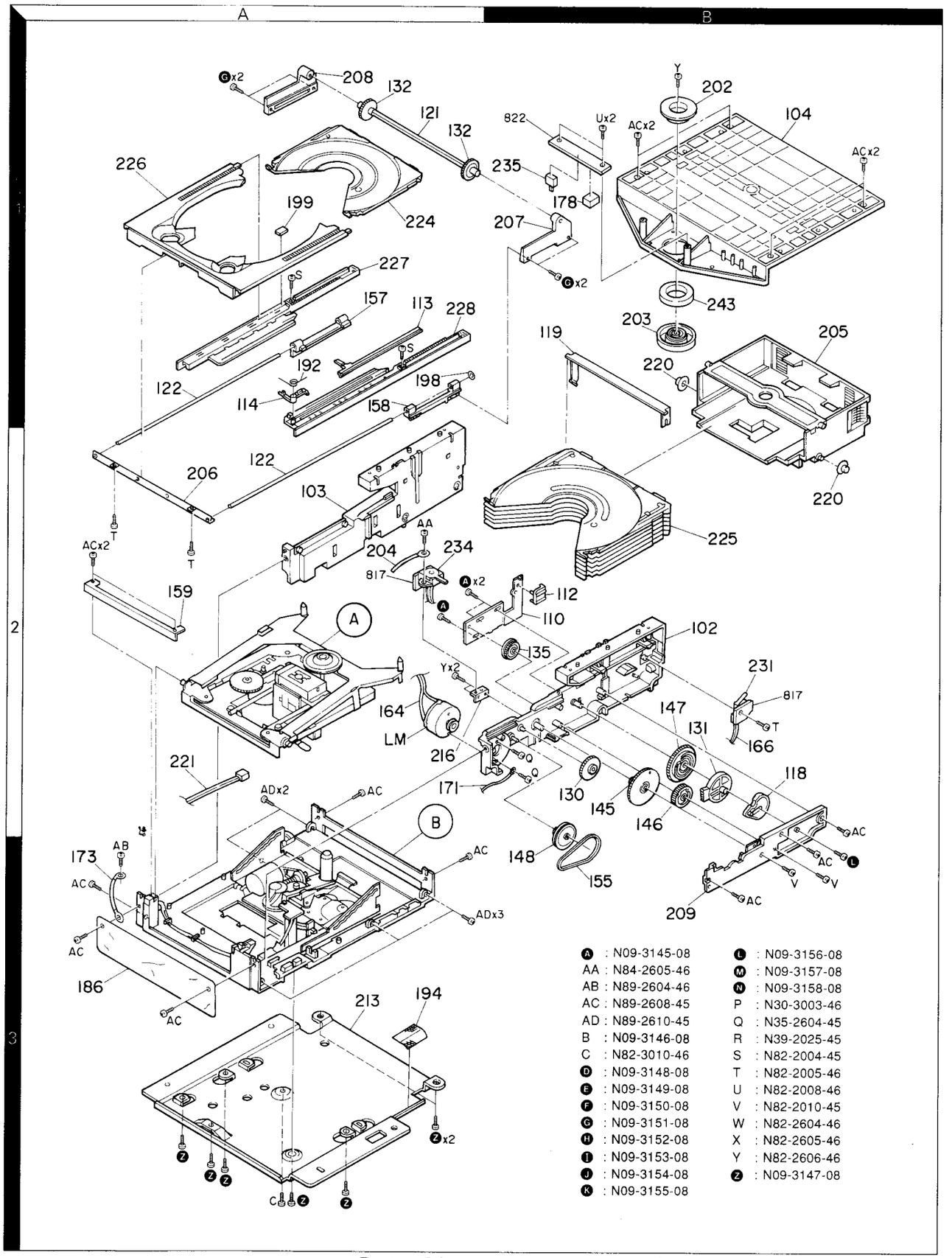
X-ME5 (3/3)

due to variations

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.DOLBY and the double-D symbol are tradmarks of Dolby Laboratories Licensing Corporation. Noise reduction circuit made under license from Dolby Laboratories Licensing Corporation.

X-ME5

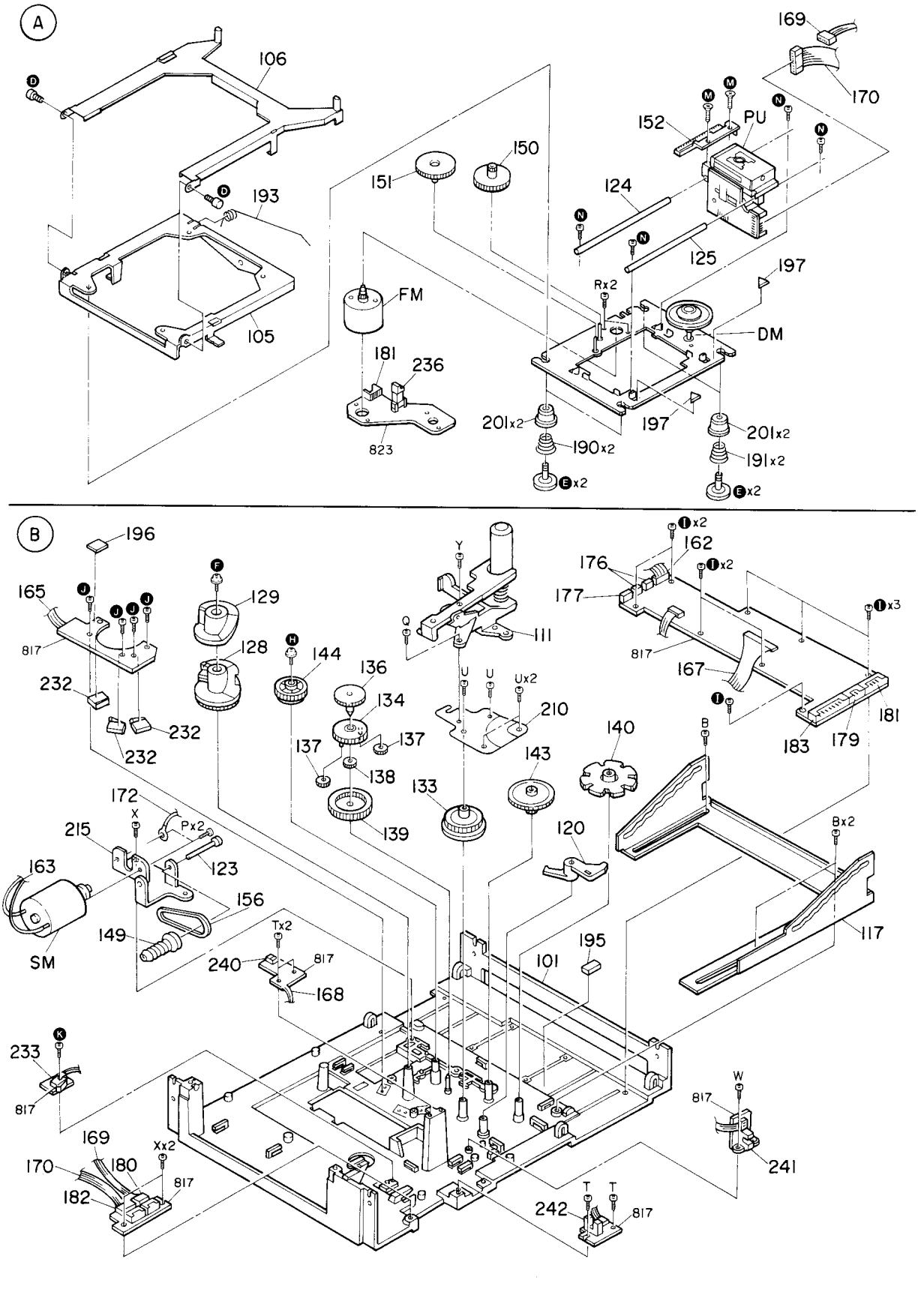
EXPLODED VIEW (CD MECHANISM)



- A : N09-3145-08
- AA : N84-2605-46
- AB : N89-2604-46
- AC : N89-2608-45
- AD : N89-2610-45
- B : N09-3146-08
- C : N82-3010-46
- D : N09-3148-08
- E : N09-3149-08
- F : N09-3150-08
- G : N09-3151-08
- H : N09-3152-08
- I : N09-3153-08
- J : N09-3154-08
- K : N09-3155-08
- L : N09-3156-08
- M : N09-3157-08
- N : N09-3158-08
- P : N30-3003-46
- Q : N35-2604-45
- R : N39-2025-45
- S : N82-2004-45
- T : N82-2005-46
- U : N82-2008-46
- V : N82-2010-45
- W : N82-2604-46
- X : N82-2605-46
- Y : N82-2606-46
- Z : N09-3147-08

Parts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (CD MECHANISM)



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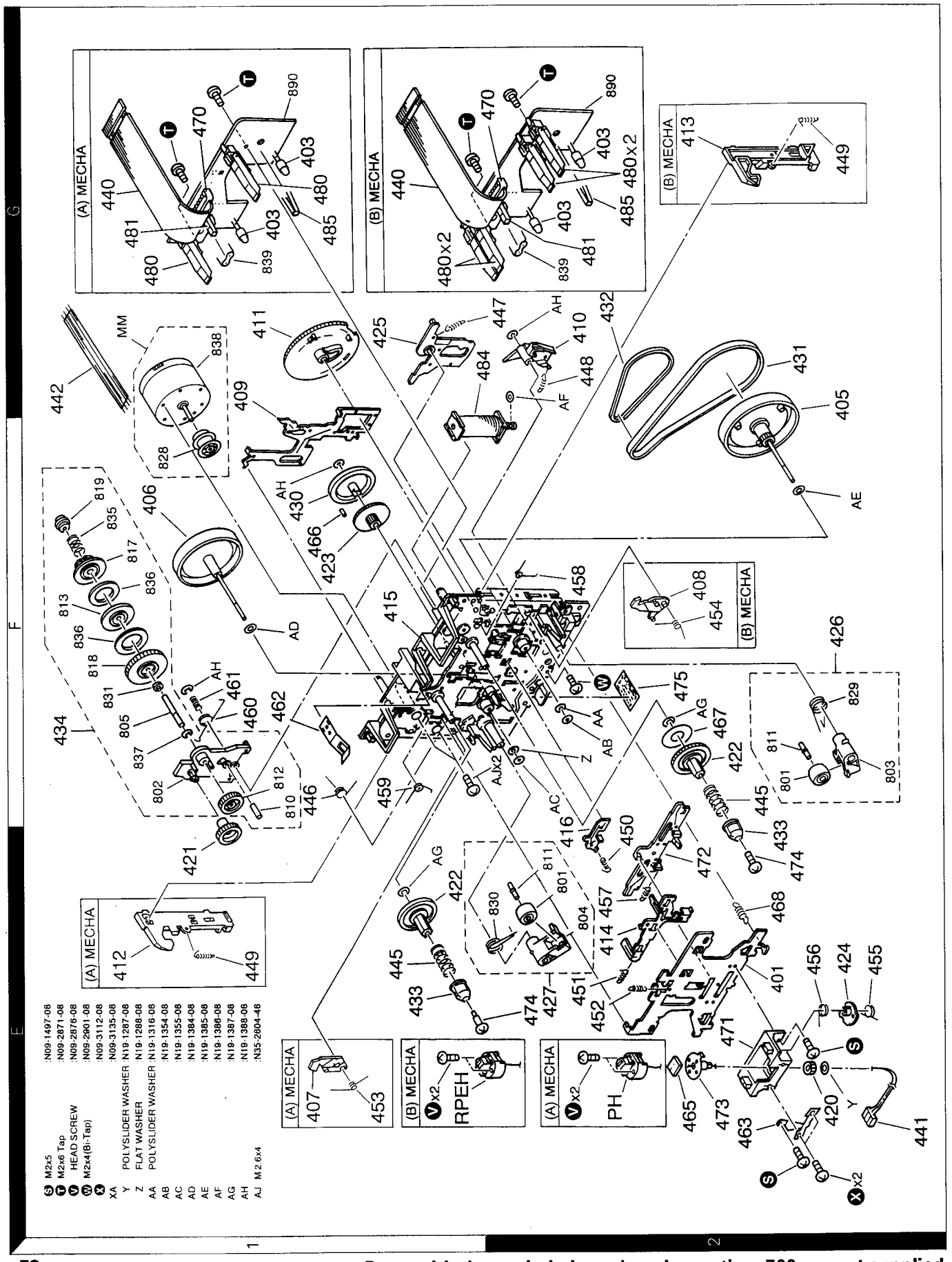
EXPLODED VIEW (CASSETTE MECHANISM)



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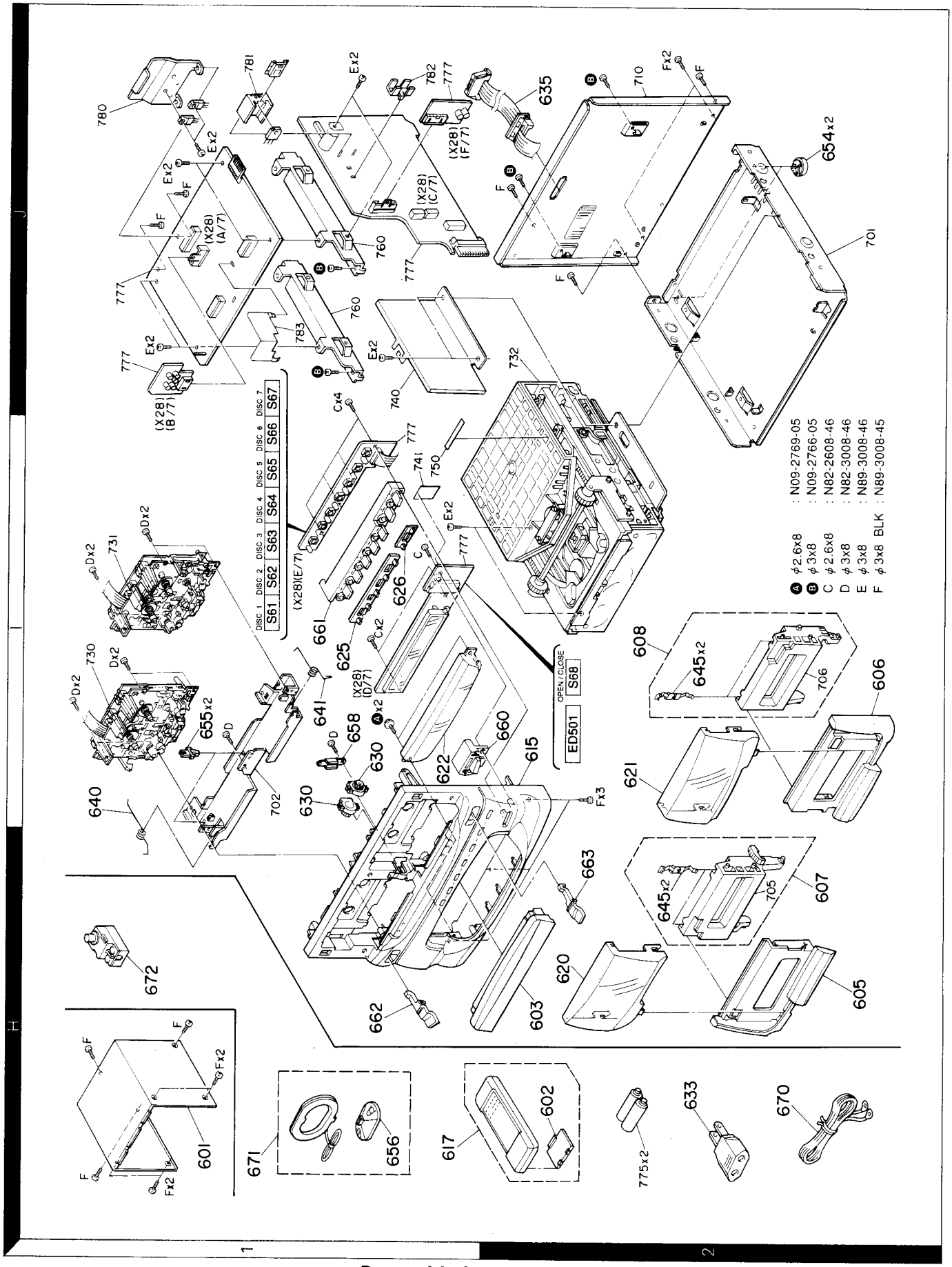
EXPLODED VIEW (UNIT)



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			X-ME5			
601	1H		A01-3144-11	METALLIC CABINET		
602	2H		A09-0106-08	BATTRY COVER		
603	2H	*	A29-0382-03	PANEL (CD TRAY)		
605	2H		A53-1806-02	CASSETTE LID		A
606	2I		A53-1807-02	CASSETTE LID		B
607	2H		A53-1808-03	CASSETTE HOLDER ASSY		A
608	2I		A53-1809-03	CASSETTE HOLDER ASSY		B
615	2I	*	A60-0597-11	PANEL (FRONT)		
617	1H	*	A70-0981-05	REMOTE CONTROLLER ASSY		
-		*	B60-1657-00	INSTRUCTION MANUAL (ENGLISH)	KRPYMX	
-		*	B60-1657-00	INSTRUCTION MANUAL (ENGLISH)	TE	
-		*	B60-1658-00	INSTRUCTION MANUAL (FRENCH)	PE	
-		*	B60-1659-00	INSTRUCTION MANUAL (GERMAN)	EG	
-		*	B60-1660-00	INSTRUCTION MANUAL (DUTCH)	E	
-		*	B60-1661-00	INSTRUCTION MANUAL (ITALIAN)	E	
-		*	B60-1662-00	INSTRUCTION MANUAL (SPANISH)	RME	
-		*	B60-1664-00	INSTRUCTION MANUAL (CHINESE)	M	
-		*	B60-1891-00	INSTRUCTION MANUAL (TAIWANESE)	M	
620	2H	*	B10-2035-02	FRONT GLASS		A
621	2I		B10-2033-02	FRONT GLASS		B
622	1I		B10-2034-13	FRONT GLASS (CD)		
625	1I	*	B12-0247-14	INDICATOR (DISC1-5)		
626	1I	*	B12-0249-04	INDICATOR (DISC6,7)		
-			B46-0094-03	WARRANTY CARD	Y	
-			B46-0095-03	WARRANTY CARD	Y	
-			B46-0096-43	WARRANTY CARD	X	
-			B46-0121-33	WARRANTY CARD	P	
-			B46-0197-00	QUESTIONAIRE CARD	K	
-			B46-0307-23	WARRANTY CARD	K	
-			B46-0310-03	WARRANTY CARD	TEG	
-			B58-0964-13	CAUTION CARD (UL)	KRY	
-			B58-0965-13	CAUTION CARD (P,T,X)	PXT	
-			B58-0966-13	CAUTION CARD (ELM TYPE)	ME	
-			B58-0970-13	CAUTION CARD (R,G)	RG	
630	1I		D39-0316-05	DAMPER		
⚠ 633	2H		E03-0115-05	AC PLUG ADAPTER	M	
635	2J		E30-2771-05	CORD WITH CONNECTOR (19PIN)		
-		*	F10-0956-03	SHIELDING PLATE		
-			F20-1347-04	INSULATING SHEET		
640	1I		G01-3652-24	TORSION COIL SPRING		
641	1I		G01-3653-24	TORSION COIL SPRING		
645	2H, 2I		G02-1059-04	FLAT SPRING		
-			G10-0177-04	NON-WOVEN FABRIC		
-		*	H10-5800-12	POLYSTYRENE FOAMED FIXTURE		W
-		*	H10-5801-12	POLYSTYRENE FOAMED FIXTURE		W
-			H13-0086-04	CARTON BOARD		
-		*	H50-1119-04	ITEM CARTON CASE	KRPYX	S
-		*	H50-1120-04	ITEM CARTON CASE	TEG	S
-		*	H50-1121-04	ITEM CARTON CASE	KRPYX	W
-		*	H50-1122-14	ITEM CARTON CASE	TEG	W

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-		*	H50-1287-04	ITEM CARTON CASE	M	S
-		*	H50-1288-04	ITEM CARTON CASE	M	W
-		*	H50-1289-14	ITEM CARTON CASE	I	W
-			H10-5796-12	POLYSTYRENE FOAMED FIXTURE		S
-			H10-5797-12	POLYSTYRENE FOAMED FIXTURE		S
-		*	H11-0065-04	POLYSTYRENE FOAMED BOARD	ITEG	W
-		*	H12-2228-04	PACKING FIXTURE	KRPYMX	W
-			H20-0587-04	PROTECTION COVER	M	
-			H25-0632-24	PROTECTION BAG	KRPYMX	
-			H25-0632-24	PROTECTION BAG	EG	
-			H25-0644-04	PROTECTION BAG (0632 PRINTED)	T	
-			H25-0672-04	PROTECTION BAG	KRPYXT	
-			H25-0672-04	PROTECTION BAG	EG	
654	2J		J02-0370-05	FOOT		
655	1I		J11-0129-05	WIRE CLAMPER		
656	1H		J19-3645-05	AM LOOP ANTENNA STAND		
658	1I		J21-6125-04	MOUNTING HARDWARE		
660	2I	*	K29-5947-04	KNOB (OPEN/CLOSE)		
661	1I	*	K29-5948-12	KNOB (DISC1-7)		
662	1H		K29-5983-04	KNOB (EJECT)		A
663	1H		K29-5984-04	KNOB (EJECT)		B
670	2H		T90-0182-15	LEAD WIRE ANTENNA		
671	1H		T90-0195-05	AM LOOP ANTENNA		
672	1H		T90-0198-05	ANTENNA ADAPTOR	TEG	
RECORD/PLAYBACK UNIT (X28-2672-70)						
D609-615			B30-2462-05	LED(GRN)		
C1			CE04LW1V222M	ELECTRO 2200UF 35WV		
C2			CE04LW1V101M	ELECTRO 100UF 35WV		
C3			CC73FSL1H221J	CHIP C 220PF J		
C4 ,5			CK73FB1E104K	CHIP C 0.10UF K		
C6			CE04LW1A101M	ELECTRO 100UF 10WV		
C7			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C8 -10			CE04LW1V101M	ELECTRO 100UF 35WV		
C11			CC73FSL1H221J	CHIP C 220PF J		
C12			CE04LW1V102M	ELECTRO 1000UF 35WV		
C13			CE04LW1V100M	ELECTRO 10UF 35WV		
C14 -16			CK73FF1C105Z	CHIP C 1.0UF Z		
C17 -20			CE04LW1V100M	ELECTRO 10UF 35WV		
C21			CQ93FMG1H103J	MYLAR 0.010UF J		
C22			CQ93FMG1H222J	MYLAR 2200PF J		
C23			CE04LW1A101M	ELECTRO 100UF 10WV		
C24			CE04LW1C331M	ELECTRO 330UF 16WV		
C25 -30			CK73FF1C105Z	CHIP C 1.0UF Z		
C31 ,32			CK73FB1H682K	CHIP C 6800PF K		
C33 ,34			CC73FSL1H221J	CHIP C 220PF J		
C35 ,36			CK73FB1H222K	CHIP C 2200PF K		
C37 ,38			CE04LW1V100M	ELECTRO 10UF 35WV		
C39 -42			CK73FB1H222K	CHIP C 2200PF K		
C43 -46			CK73FB1E104K	CHIP C 0.10UF K		
C47 ,48			CE04LW1V100M	ELECTRO 10UF 35WV		
C49 ,50			CK73FB1E104K	CHIP C 0.10UF K		
C51 ,52			CK73FF1C105Z	CHIP C 1.0UF Z		
C53 -56			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		

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C57			CK73FF1C105Z	CHIP C 1.0UF Z		
C58			CQ93FMG1H104J	MYLAR 0.10UF J		
C59			CQ93FMG1H332J	MYLAR 3300PF J		
C60			CC73FSL1H560J	CHIP C 56PF J		
C61 ,62			CC73FSL1H150J	CHIP C 15PF J		
C63 ,64			CK73FB1E104K	CHIP C 0.10UF K		
C65 ,66			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C67 ,68			CK73FB1E273K	CHIP C 0.027UF K		
C69			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C70			CE04LW1V100M	ELECTRO 10UF 35WV		
C71			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C72			CE04LW1V100M	ELECTRO 10UF 35WV		
C73			CK73FB1H103K	CHIP C 0.010UF K		
C74 ,75			CK73FB1H562K	CHIP C 5600PF K		
C76			CQ93HP2A103J	MYLAR 0.010UF J		
C77 -80			CK73FB1H223K	CHIP C 0.022UF K		
C81 ,82			CK73FB1H103K	CHIP C 0.010UF K		
C83 ,84			CK73FB1H561K	CHIP C 560PF K		
C85 ,86			C91-1436-05	FILM 220PF J		
C87 ,88			C91-1434-05	FILM 150PF J		
C89			CC45FSL2H100D	CERAMIC 10PF D		
C90 -92			CE04LW1A101M	ELECTRO 100UF 10WV		
C93 ,94			CC73FSL1H221J	CHIP C 220PF J		
C95 ,96			CE04LW1C470M	ELECTRO 47UF 16WV		
C97 ,98			CE04LW1V100M	ELECTRO 10UF 35WV		
C99 ,100			CC73FSL1H391J	CHIP C 390PF J		
C101,102			CK73FB1H561K	CHIP C 560PF K		
C103,104			CK73FB1H223K	CHIP C 0.022UF K		
C105,106			CK45FB1H681K	CERAMIC 680PF K		
C107,108			CE04LW1V100M	ELECTRO 10UF 35WV		
C109,110			CE04LW1C470M	ELECTRO 47UF 16WV		
C111,112			CC73FSL1H391J	CHIP C 390PF J		
C113,114			CK73FB1H223K	CHIP C 0.022UF K		
C115,116			CC73FSL1H221J	CHIP C 220PF J		
C117,118			CK73FB1H473K	CHIP C 0.047UF K		
C119,120			CK73FF1C105Z	CHIP C 1.0UF Z		
C121,122			CQ93FMG1H332J	MYLAR 3300PF J		
C123,124			CK73FF1C105Z	CHIP C 1.0UF Z		
C125,126			CQ93FMG1H332J	MYLAR 3300PF J		
C127			CC45FSL1H221J	CERAMIC 220PF J		
C128			CK73FB1H223K	CHIP C 0.022UF K		
C129,130			CK73FB1H102K	CHIP C 1000PF K		
C131,132			CC73FSL1H271J	CHIP C 270PF J		
C133			CK45FF1H472Z	CERAMIC 4700PF Z		
C134			CK45FF1H223Z	CERAMIC 0.022UF Z		
C135,136			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C137			CK45FF1H472Z	CERAMIC 4700PF Z		
C138			CE04LW1A101M	ELECTRO 100UF 10WV		
C139			CK73FB1H103K	CHIP C 0.010UF K		
C140			CQ93FMG1H104J	MYLAR 0.10UF J		
C141,142			CE04LW1A331M	ELECTRO 330UF 10WV		
C143			CK73FB1H103K	CHIP C 0.010UF K		
C501,502			CC73FSL1H150J	CHIP C 15PF J		
C503			CE04LW1A470M	ELECTRO 47UF 10WV		
C504			CK73FB1H103K	CHIP C 0.010UF K		

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C505			CE04LW1A101M	ELECTRO	100UF 10WV		
C506			CC73FSL1H270J	CHIP C	27PF J		
C507,508			CK73FB1H222K	CHIP C	2200PF K		
C509			CK73FB1H103K	CHIP C	0.010UF K		
C510			CK73FB1H333K	CHIP C	0.033UF K		
C511			CQ93FMG1H103J	MYLAR	0.010UF J		
C512			CE04LW0J221M	ELECTRO	220UF 6.3WV		
C513,514			CK73FB1H103K	CHIP C	0.010UF K		
C515			CE04HW1E100M	NP-ELEC	10UF 25WV		
C516			CK73FB1H103K	CHIP C	0.010UF K		
C517			CE04HW1E100M	NP-ELEC	10UF 25WV		
C518			CK73FB1H473K	CHIP C	0.047UF K		
C519			CK73EB1C474K	CHIP C	0.47UF K		
C520			CE04LW0J221M	ELECTRO	220UF 6.3WV		
C521			CK73FB1E563K	CHIP C	0.056UF K		
C522			CC73FSL1H271J	CHIP C	270PF J		
C523			CK73FB1H102K	CHIP C	1000PF K		
C524			CC73FSL1H271J	CHIP C	270PF J		
C525			CK73FB1E473K	CHIP C	0.047UF K		
C526			CK73FB1H333K	CHIP C	0.033UF K		
C527			CK73FB1E104K	CHIP C	0.10UF K		
C528			CK73FF1C105Z	CHIP C	1.0UF Z		
C529			CK73FB1E104K	CHIP C	0.10UF K		
C530			CE04LW1A101M	ELECTRO	100UF 10WV		
C531			CC73FSL1H470J	CHIP C	47PF J		
C532			CK73EB1C474K	CHIP C	0.47UF K		
C533			CK73FB1E104K	CHIP C	0.10UF K		
C534			CK73FB1H333K	CHIP C	0.033UF K		
C535,536			CK73FF1C105Z	CHIP C	1.0UF Z		
C537,538			CE04HW1E100M	NP-ELEC	10UF 25WV		
C539			CK73FB1E104K	CHIP C	0.10UF K		
C540			CK45FF1H103Z	CERAMIC	0.010UF Z		
C541			CK73FB1E104K	CHIP C	0.10UF K		
C542			CK73FB1H102K	CHIP C	1000PF K		
C543			CK73FB1H332K	CHIP C	3300PF K		
C544			CK73FB1H103K	CHIP C	0.010UF K		
C545			CK73EB1C474K	CHIP C	0.47UF K		
C546			CK73FB1H103K	CHIP C	0.010UF K		
C547			CK73FB1H152K	CHIP C	1500PF K		
C548			CK73FB1H473K	CHIP C	0.047UF K		
C549			CE04LW0J221M	ELECTRO	220UF 6.3WV		
C550			CK73FB1H103K	CHIP C	0.010UF K		
C551			CQ93FMG1H103J	MYLAR	0.010UF J		
C552			CE04LW0J221M	ELECTRO	220UF 6.3WV		
C553			CK73FB1H103K	CHIP C	0.010UF K		
C554			CE04LW0J221M	ELECTRO	220UF 6.3WV		
C555,556			CE04LW1A101M	ELECTRO	100UF 10WV		
C557,558			CF92FV1H564J	MF	0.56UF J		
C559,560			CQ93FMG1H562J	MYLAR	5600PF J		
C561			CE04LW1C332M	ELECTRO	3300UF 16WV		
C562			CK73FB1H103K	CHIP C	0.010UF K		
C563			CK73FB1H102K	CHIP C	1000PF K		
C564			CK73FF1C105Z	CHIP C	1.0UF Z		
C565			CK73FB1H103K	CHIP C	0.010UF K		
C566			CK73FB1H152K	CHIP C	1500PF K		

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C567			CK73FB1H103K	CHIP C 0.010UF K		
C568			CE04LW1C330M	ELECTRO 33UF 16WV		
C570,571			CK73FB1H103K	CHIP C 0.010UF K		
C572			CC45FSL1H101J	CERAMIC 100PF J		
C573			CE04LW1V470M	ELECTRO 47UF 35WV		
C574,575			CK73FB1H103K	CHIP C 0.010UF K		
C576			CK73FB1H473K	CHIP C 0.047UF K		
C577,578			CK73FB1H103K	CHIP C 0.010UF K		
C579			CE04LW1C101M	ELECTRO 100UF 16WV		
C580			CK73FB1E104K	CHIP C 0.10UF K		
C581			CE04LW1A470M	ELECTRO 47UF 10WV		
C582			CK73FB1E104K	CHIP C 0.10UF K		
C583,584			CK73FB1H102K	CHIP C 1000PF K		
C585			CC73FSL1H050C	CHIP C 5PF C		
C586			CC73FSL1H270J	CHIP C 27PF J		
C587			CK73FB1H561K	CHIP C 560PF K		
C588			CC73FSL1H560J	CHIP C 56PF J		
C593			CK73FF1C105Z	CHIP C 1.0UF Z		
J1 ,2			J11-0098-05	WIRE CLAMPER		
J51 ,52			J11-0098-05	WIRE CLAMPER		
L1 ,2			L79-1201-05	LC FILTER		
L3 -6			L40-1035-29	SMALL FIXED INDUCTOR(10MH, J)		
L7 ,8			L32-0547-05	BIAS OSCILATING COIL		
L9			L32-0570-05	BIAS OSCILATING COIL		
L501			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)		
L502			L19-0076-05	TRANSFORMER FOR CONVERTER		
X1			L78-0294-05	RESONATOR (10.000M)		
X501			L78-0299-05	RESONATOR (16.93M)		
CP1 ,2			R90-0815-05	MULTI-COMP 10K X7		
CP3			R90-0856-05	MULTI-COMP 10KX5 J 1/6W		
CP4 ,5			R90-0809-05	MULTI-COMP 10KX4 J 1/6W		
R1			RS14KB3D102J	FL-PROOF RS 1.0K J 2W		
R10			RD14NB2E101J	RD 100 J 1/4W		
R11			RD14NB2E122J	RD 1.2K J 1/4W		
R176-178			RD14NB2E100J	RD 10 J 1/4W		
R237			RD14NB2E680J	RD 68 J 1/4W		
R623			RS14KB3DR68J	FL-PROOF RS 0.68 J 2W		
VR1			R12-3686-05	TRIMMING POT.(22K ﾌﾀ)		
VR2			R12-3685-05	TRIMMING POT.(10K ﾌﾀ)		
VR3			R12-3686-05	TRIMMING POT.(22K ﾌﾀ)		
VR4			R12-3685-05	TRIMMING POT.(10K ﾌﾀ)		
VR51-54			R12-3127-05	TRIMMING POT.(10K,ﾀﾃ)		
W501-519			R92-0679-05	CHIP R 0 OHM		
W521-529			R92-0679-05	CHIP R 0 OHM		
W531-540			R92-0679-05	CHIP R 0 OHM		
W543-560			R92-0679-05	CHIP R 0 OHM		
K1			S76-0018-05	MAGNETIC RELAY		
S61 -68			S40-1064-05	PUSH SWITCH		
D1			D3SBA20F03	DIODE		
D1			RBV-402LFA	DIODE		
D2 ,3			HSS104	DIODE		
D2 ,3			1SS133	DIODE		
D4			MTZJ8.2(B)	ZENER DIODE		

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X-ME5

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	D4			RD8.2ES(B2)	ZENER DIODE		
	D5 ,6			S5688B	DIODE		
	D5 ,6			1SR139-100	DIODE		
	D7			MTZJ3.9(B)	ZENER DIODE		
	D7			RD3.9ES(B2)	ZENER DIODE		
	D8			HSS104	DIODE		
	D8			1SS133	DIODE		
	D9			MTZJ2.7(B)	ZENER DIODE		
	D9			RD2.7ES(B2)	ZENER DIODE		
	D10 -13			S5688B	DIODE		
	D10 -13			1SR139-100	DIODE		
	D14 -17			HSS104	DIODE		
	D14 -17			1SS133	DIODE		
	D18			MTZJ5.1(B)	ZENER DIODE		
	D18			RD5.1ES(B2)	ZENER DIODE		
	D19 -21			HSS104	DIODE		
	D19 -21			1SS133	DIODE		
	D23			HSS104	DIODE		
	D23			1SS133	DIODE		
	D24 ,25			DTZ2.7(B)	ZENER DIODE		
	D501-503			HSS104	DIODE		
	D501-503			1SS133	DIODE		
	D504			MTZJ2.7(B)	ZENER DIODE		
	D504			RD2.7ES(B2)	ZENER DIODE		
	D505-507			HSS104	DIODE		
	D505-507			1SS133	DIODE		
	D508			MTZJ5.1(B)	ZENER DIODE		
	D508			RD5.1ES(B2)	ZENER DIODE		
	D509			HSS104	DIODE		
	D509			1SS133	DIODE		
	D510			MTZJ6.8(B)	ZENER DIODE		
	D510			RD6.8ES(B2)	ZENER DIODE		
	D511,512			MTZJ15(B)	ZENER DIODE		
	D511,512			RD15ES(B2)	ZENER DIODE		
	D513			MA113	DIODE		
	D514,515			HSS104	DIODE		
	D514,515			1SS133	DIODE		
	D517			1SS92	DIODE		
	D517			1S954	DIODE		
⚠	D519			KBP02ML-6127	DIODE		
	D521-525			MA113	DIODE		
	D526,527			HSS104A	DIODE		
	D526,527			1SS131	DIODE		
	D528,529			HSS104	DIODE		
	D528,529			1SS133	DIODE		
	D601-607			MA113	DIODE		
	D608			HSS104A	DIODE		
	D608			1SS131	DIODE		
	ED501			10-BT-147GK	INDICATOR TUBE		
	IC1			BA17805T	IC(VOLTAGE REGULATOR/ +5V)		
	IC1			UPC7805AHF	IC(VOLTAGE REGULATOR/ +5V)		
	IC2			S-80740AL-A4	IC(VOLTAGE DETECTOR)		
	IC3			CXP84340-111Q	MI-COM IC		
	IC4			XL24C01A	MEMORY IC		
	IC5			NJM4558M	IC(OP AMP X2)		

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IC6			UPC1297CA	IC(DOL HX PRO SYSTEM)		
IC7 ,8			NJM4565MD	IC(OP AMP X2)		
IC9			BA10393F	IC		
IC10			NJM4558M	IC(OP AMP X2)		
IC11			HA12167FB	IC(DOLBY B/C, REC EQ)		
IC51			CXA1782BQ	MOS-IC		
IC52			CXD2507Q	MOS-IC		
IC53			SM5875BM	MOS-IC		
IC54			UPD78044AGF-022	MI-COM IC		
IC55			BA6398FP	ANALOGUE IC		
IC56			NJM2100M	IC(OP AMPLIFIER)		
IC57,58			LB1638M	DI BI-POLAR IC		
IC59			M5237ML	IC(VOLTAGE REGULATOR)		
IC61			NJU3711M	MOS-IC		
Q1			2SD2012	TRANSISTOR		
Q1			2SD2061	TRANSISTOR		
Q2			2SC1740S(Q,R)	TRANSISTOR		
Q2			2SC2785(F,E)	TRANSISTOR		
Q3			2SD2012	TRANSISTOR		
Q3			2SD2061	TRANSISTOR		
Q4			2SC1740S(Q,R)	TRANSISTOR		
Q4			2SC2785(F,E)	TRANSISTOR		
Q5 -7			DTC124EU	DIGITAL TRANSISTOR		
Q8			2SA1576(R,S)	TRANSISTOR		
Q9 ,10			2SC3246	TRANSISTOR		
Q11 -13			DTC124EU	DIGITAL TRANSISTOR		
Q14			2SA1576(R,S)	TRANSISTOR		
Q15 ,16			2SC3246	TRANSISTOR		
Q17 ,18			DTC124EU	DIGITAL TRANSISTOR		
Q19 ,20			2SC4081(R,S)	TRANSISTOR		
Q21 ,22			DTC124EU	DIGITAL TRANSISTOR		
Q23 ,24			2SC4081(R,S)	TRANSISTOR		
Q25 ,26			2SD1757K	TRANSISTOR		
Q27			DTC124EU	DIGITAL TRANSISTOR		
Q28			2SC4081(R,S)	TRANSISTOR		
Q29 -31			DTA124EU	DIGITAL TRANSISTOR		
Q32 ,33			DTC124EU	DIGITAL TRANSISTOR		
Q34			2SC3940A	TRANSISTOR		
Q35 ,36			2SC1740S(Q,R)	TRANSISTOR		
Q35 ,36			2SC2785(F,E)	TRANSISTOR		
Q37 -49			DTC124EU	DIGITAL TRANSISTOR		
Q51 -54			2SC4081(R,S)	TRANSISTOR		
Q501			2SC4081(R,S)	TRANSISTOR		
Q502,503			2SA954(L,K)	TRANSISTOR		
Q504			2SC1740S(Q,R)	TRANSISTOR		
Q504			2SC2785(F,E)	TRANSISTOR		
Q505			2SB1370(E,F)	TRANSISTOR		
⚠ Q505			2SB1375	TRANSISTOR		
Q506,507			DTC113ZS	DIGITAL TRANSISTOR		
Q506,507			UN4219	TRANSISTOR		
Q508			2SC1740S(Q,R)	TRANSISTOR		
Q508			2SC2785(F,E)	TRANSISTOR		
Q509			2SB1167(R,S)	TRANSISTOR		
Q509			2SB1168(R,S)	TRANSISTOR		
Q510			2SB1308(Q,R)	TRANSISTOR		

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Q511			2SA1576(R,S)	TRANSISTOR		
CD MECHANISM (7 BANK) (D40-1390-05)						
101	3D	*	A10-3195-08	MAIN CHASSIS ASSY		
102	2B	*	A11-1051-08	SIDE CHASSIS R ASSY		
103	2A	*	A11-1052-08	SIDE CHASSIS L		
104	1B	*	A11-1053-08	TOP COVER		
105	1C	*	A11-1054-08	SUS CHASSIS ASSY		
106	1C	*	A11-1055-08	GUIDE PLATE ASSY		
110	2B	*	D10-3518-08	CHANGE PLATE ASSY		
111	2D	*	D10-3520-08	DISC LOCK ARM ASSY		
112	2B	*	D10-3521-08	CARRIAGE OPENNER		
113	1A	*	D10-3522-08	SHUTTLE		
114	1A	*	D10-3523-08	SHUTTLE LOCK		
117	3D	*	D10-3524-08	STOCKER CAM		
118	2B	*	D10-3525-08	TRACE ARM N ASSY		
119	1B	*	D10-3526-08	ASSIST ARM		
120	2D	*	D10-3527-08	CHANGE ARM		
121	1A	*	D10-3528-08	TIMING SHAFT		
122	1A,2A	*	D10-3529-08	TR-G-SHAFT-N		
123	3C	*	D10-3530-08	WORM SHAFT		
124	1D	*	D10-3531-08	GUIDE BAR B		
125	1D	*	D10-3532-08	GUIDE BAR A		
128	2C	*	D12-0149-08	ME UD CAM-KW		
129	2C	*	D12-0150-08	ME UD CAM TOP		
130	2B	*	D13-1660-08	SIDE IDLER		
131	2B	*	D13-1661-08	TRAY STOPPER		
132	1A,1B	*	D13-1662-08	TIMING GEAR		
133	2C	*	D13-1663-08	LOCK IDLER		
134	2C	*	D13-1664-08	D2-ST-GEAR ASSY		
135	2B	*	D13-1665-08	CHANGE GEAR		
136	2C	*	D13-1666-08	D1-ST-GEAR		
137	2C	*	D13-1667-08	D3-ST-GEAR		
138	2C	*	D13-1668-08	D4-ST-GEAR		
139	2C	*	D13-1669-08	D5-ST-GEAR		
140	2D	*	D13-1670-08	D6P-ST-GEAR		
143	2D	*	D13-1672-08	D7M-ST-GEAR		
144	2C	*	D13-1673-08	ID-ST-GEAR		
145	2B	*	D13-1674-08	S-F-GEAR		
146	2B	*	D13-1675-08	S-I-GEAR		
147	2B	*	D13-1676-08	S-M-GEAR		
148	3B	*	D13-1677-08	S-P-GEAR		
149	3C	*	D13-1678-08	ST-EORM GEAR		
150	1D	*	D13-1679-08	GEAR MIDDLE		
151	1C	*	D13-1680-08	GEAR POWER		
152	1D	*	D13-1681-08	PLATE RACK		
155	3B	*	D16-0380-08	BELT C-S		
156	3C	*	D16-0381-08	BELT T-C		
157	1A	*	D23-0318-08	TRAY GUIDE L		
158	1A	*	D23-0319-08	TRAY GUIDE R		
159	1A	*	D32-0345-08	MECHA B STOPPER		
-		*	D13-1662-08	TIMING GEAR		
162	2D	*	E35-1064-08	CNW-W6P		
163	3C	*	E35-1065-08	CNW-2P175		

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164	2A	*	E35-1066-08	CNW-2P330		
165	2C	*	E35-1067-08	CNW-W4P		
166	2B	*	E35-1068-08	WIRING HARNESS(2P50)		
167	2D	*	E35-1069-08	CNW-W11P		
168	3C	*	E35-1070-08	CNW-3P		
169	1D	*	E35-1071-08	CNW-W5P		
170	1D	*	E35-1072-08	CNW-W8P		
171	2A	*	E35-1073-08	WIRE WITH LUG		
172	2C	*	E35-1074-08	WIRE WITH LUG B		
173	3A	*	E35-1075-08	LUG LEAD		
176	2D		E40-3246-05	B2B-PH-K-S		
177	2D		E40-3247-05	B3B-PH-K-S		
178	1B		E40-3260-05	S2B-PH-K-S		
179	2D		E40-3262-05	S4B-PH-K-S		
180	3C		E40-3263-05	S5B-PH-K-S		
181	1C,2D		E40-3264-05	S6B-PH-K-S		
182	3C		E40-3266-05	S8B-PH-K-S		
183	2D		E40-3270-05	S12B-PH-K-S		
186	3A	*	F12-0137-08	ALUMI SHIELD		
190	2D	*	G01-3756-08	MECHA SPRING REAR		
191	2D	*	G01-3757-08	MECHA SPRING FRONT		
192	1A	*	G01-3758-08	SHUTTLE LOCK SP		
193	1C	*	G01-3759-08	GUIDE PLATE SPRING		
194	3A	*	G10-0417-08	HIMELON SHEET		
195	3D	*	G13-0506-08	LD CUSHION		
196	2C	*	G13-0507-08	CUSHION 8X8X1		
197	1D,2D	*	G13-0508-08	CUSHION		
198	1A	*	G13-0509-08	STOP RUBBER		
199	1A	*	G16-0853-08	SHEET		
201	2D	*	J02-1123-08	MECHA SUS AW		
202	1B	*	J11-0801-08	CLAMPER HI		
203	1B	*	J11-0308-08	CLAMPER LO		
204	2A	*	J11-0802-08	CORD CLAMPER 3B40		
205	1B	*	J19-3743-08	STOCKER ASSY		
206	2A	*	J19-3744-08	TRAY PLATE		
207	1B	*	J19-3745-08	TRAY HOLDER R		
208	1A	*	J19-3746-08	TRAY HOLDER L		
209	3B	*	J19-3747-08	GEAR HOLDER		
210	2D	*	J19-3748-08	GEAR PLATE		
213	3A	*	J21-6147-02	MECHA HOLDER KW		
215	2C	*	J21-6228-08	MOTOR-BRACKET		
216	2A	*	J21-6229-08	SW-BRACKET		
220	1B,2B	*	J31-0867-08	STC GUIDE PIN		
224	1A	*	J99-0558-08	CARRIAGE S		
225	2B	*	J99-0559-08	CARRIAGE -N		
226	1A	*	J99-0560-08	TRAY TOP		
227	1A	*	J99-0562-08	TRAY L		
228	1A	*	J99-0564-08	TRAY R		
A	2A	*	N09-3145-08	BT 2.0X1.4X5.9		
AA	2A		N84-2605-46	M2.6X5 PAN S-TIGHT		
AB	3A		N89-2604-46	M2.6X4 BIND B-TIGHT		
AC	2A,3A		N89-2608-45	M6X8 BIND B-TIGHT		
AD	2A,3B		N89-2610-45	M2.6X10 BIND B-TIGHT		

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B	2D	*	N09-3146-08	B.T 2.6-1.4-7.6		
C	3A		N82-3010-46	M3X10 BIND P-TIGHT		
D	1C	*	N09-3148-08	ST 2-4-4 AW		
E	2D	*	N09-3149-08	M2-3-9 AW		
F	2C	*	N09-3150-08	M3X14 TAPPING WITH W		
G	1A,1B	*	N09-3151-08	M2.6X11 BIND B-TIGHT		
H	2C	*	N09-3152-08	M2X8 BIND B-TIGHT WITH W		
I	2D	*	N09-3153-08	M1.7X4 TOUCH LOCK		
J	2C	*	N09-3154-08	M1.7X5 TOUCH LOCK		
K	3C	*	N09-3155-08	M1.7X8 TOUCH LOCK		
L	3B	*	N09-3156-08	M2X4W-SEMS		
M	1D	*	N09-3157-08	M2X5 FLAT		
N	1D	*	N09-3158-08	M2.6X6 S-TIGHT		
P	2C		N30-3003-46	M3X3 PAN		
Q	2B,2C		N35-2604-45	N2.6X4 BIND		
R	1D		N39-2025-45	M2X2.5 PAN		
S	1A		N82-2004-45	M2X4 BIND P-TIGHT		
T	2A,2B		N82-2005-46	M2X5 BIND P-TIGHT		
U	1B,2D		N82-2008-46	M2X8 BIND P-TIGHT		
V	3B	*	N82-2010-45	M2X10 BIND P-TIGHT		
W	3D	*	N82-2604-46	M2.6X4 BIND P-TIGHT		
X	2C,3C		N82-2605-46	M2.6X5 BIND P-TIGHT		
Y	2A,1B		N82-2606-46	M2.6X6 BIND P-TIGHT		
Z	3A	*	N09-3147-08	REI-CURL PT3X9.5		
231	2B	*	S64-0016-08	MSS-10L2-1		
232	2C	*	S64-0017-08	MSS-10R2-16		
233	3C	*	S64-0018-08	MSS-10R2-17		
234	2A	*	S64-0019-08	SSS-13		
235	1B	*	S64-0020-08	SW-112		
236	1C	*	S74-0048-08	LEAF SW BSW-333A		
240	3C	*	T95-0137-08	GP2S40		
241	3D	*	T95-0138-08	GS1S51V		
242	3D	*	T95-0139-08	GP1S52V		
243	1B	*	T99-0560-08	MAGNET 17X27X5		
DM	1D	*	A11-1050-08	DISC MOTOR ASSY		
FM	1C	*	T42-0700-08	FEED MOTOR ASSY		
LM	2A	*	T42-0699-08	LOADING MOTOR ASSY		
PU	1D	*	T25-0037-08	PICK UP SF-91PQ		
SM	3C	*	T42-0698-08	STOCKER MOTOR ASSY		
MECHANISM ASS'Y (D40-136X-XX) 3-X5 : A MECHA 4-X5 : B MECHA						
401	2E		A10-3174-08	HEAD CHASSIS		
403	1G,2G		B30-2409-08	LED SEL2415E		
405	2G		D01-0175-08	FLYWHEEL (R) ASSY		
406	1F		D01-0176-08	FLYWHEEL (L) ASSY		
407	1E		D10-3468-08	INTER LOCK ARM (L)(A MECHA)		
408	2F		D10-3469-08	INTER LOCK ARM (R)(B MECHA)		
409	1G		D10-3470-08	SHIFT LEVER		
410	2G		D10-3471-08	HEAD CHANGE ARM		
411	1G		D10-3472-08	CAM GEAR		
412	1E		D10-3476-08	EJECT LEVER (L) (A MECHA)		
413	2G		D10-3477-08	EJECT LEVER (R) (B MECHA)		
414	2E		D10-3478-08	SELET LEVER		

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415	1F		D10-3479-08	CHASSIS ØS ASSY		
416	2E		D10-3480-08	C/R LEVER		
420	2E		D13-0981-08	RØTATIØN GEAR		
421	1E		D13-1616-08	REW GEAR		
422	1E,2F		D13-1617-08	REEL GEAR		
423	1F		D13-1618-08	IDLER GEAR		
424	2E		D13-1621-08	RETURN GEAR		
425	1G		D13-1622-08	TRIGGER ARM		
426	2F		D14-0367-08	PINCH ARM (R) ASSY		
427	2E		D14-0368-08	PINCH ARM (L) ASSY		
430	1F		D15-0369-08	IDLER PULLEY		
431	2G		D16-0375-08	DRIVE BELT		
432	2G		D16-0376-08	CLUTCH BELT		
433	1E,2E		D19-0270-18	REEL CAP (A)		
434	1F		D19-0287-08	CLUTCH ARM ASSY		
440	1G		E35-0934-08	15P FLAT RIBBØN WIRE		
441	2E	*	E35-1006-08	5P HEAD WIRE ASSY (B MECHA)		
441	2E	*	E35-1007-08	3P HEAD WIRE ASSY (A MECHA)		
442	1G		E35-0986-08	MØTØR WIRE		
445	1E,2F		G01-3709-08	B.T SPRING		
446	1F		G01-3710-08	SHIFT LEVER SP		
447	1G		G01-3711-08	TRIGGER ARM SP		
448	2G		G01-3712-08	HEAD CHANGE ARM SP		
449	1E,2G		G01-3713-08	EJECT SP		
450	2E		G01-3714-08	C/R LEVER SP		
451	2E		G01-3715-08	SELECT SP		
452	2E		G01-3716-08	SHIFT SP		
453	1E		G01-3717-08	INTER LØCK SP (L)		
454	2F		G01-3723-08	INTER LØCK SP (R)		
455	2E		G01-3718-08	RETURN SPR		
456	2E		G01-3719-08	FWD SPR		
457	2E		G01-3720-08	HEAD RETURN PLATE SP		
458	2F		G01-3721-08	BRAKE SP (R)		
459	1F		G01-3722-08	BRAKE SP (L)		
460	1F		G01-3724-08	CLUTCH ARM SPRING (B)		
461	1F		G01-3725-08	CLUTCH SP		
462	1F		G02-0913-08	PACK SPRING		
463	2E		G02-1043-08	AZIMUTH SPR		
465	2E		G11-2117-08	HEAD WIRE CLAMP		
466	1F		G11-2205-08	TUBE		
467	2F		G16-0791-08	REFLECT SEAL		
468	2E		G01-3739-08	HEAD CHASSIS SP		
470	1G		J19-3652-08	CABLE HØLDER		
471	2E		J19-3709-08	HEAD BASE		
472	2E		J21-6135-08	HEAD RETURN PLATE		
473	2E	*	J21-6199-08	HEAD PLATE ASSY		
474	2E		J42-0183-08	REEL BUSH		
475	2F		J69-0086-08	FILAMENT TAPE		
AA			N19-1316-08	PØLY WASHER		
AB			N19-1354-08	NYLØN WASHER		
AC			N19-1355-08	NYLØN WASHER		
AD			N19-1384-08	PØLY WASHER		
AE			N19-1385-08	PØLY WASHER		

L: Scandinavia **K**: USA **P**: Canada **R**: Mexico
Y: PX (Far East, Hawaii) **T**: England **E**: Europe **G**: Germany
Y: AAFES (Europe) **X**: Australia **M**: Other Areas

A: A DECK **S**: SINGAPORE MADE
B: B DECK **W**: MALAYSIA MADE

⚠ indicates safety critical components

PARTS LIST

＊ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
AF			N19-1386-08	POLY WASHER		
AG			N19-1387-08	TEFRON WASHER		
AH			N19-1388-08	POLY WASHER		
AK			N09-2900-08	SCREW		
S			N09-1497-08	TAP TITE SCREW		
T			N09-2871-08	TAPPING SCREW		
V			N09-2876-08	HEAD SCREW		
W			N09-2901-08	BIND TAP TITE SCREW		
X			N09-3112-08	AZIMUTH SCREW		
Y			N19-1287-08	POLY WASHER		
Z			N19-1288-08	POLY WASHER		
480	1G,2G		S74-0033-08	REC SWITCH		
481	1G,2G		S74-0042-08	PLAY SWITCH		
484	1G		T94-0233-08	SOLENOID ASSY		
485	1G,2G		T95-0125-08	PHOTO INTERRUPTER		
MM	1G		T42-0687-08	MOTOR ASSY		
PH	2E	＊	T31-0072-08	ROTATION HD KP-7442-CS-8352		A
RPEH	1E	＊	T39-0027-08	ROTATION HD KC-9242-HB-8354		B

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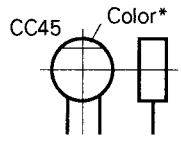
PARTS LIST

CAPACITORS

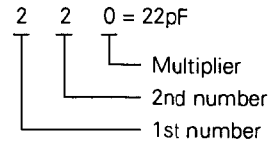
CC 45 TH 1H 220 J
1 2 3 4 5 6

1 = Type ... ceramic, electrolytic, etc.
2 = Shape ... round, square, ect.
3 = Temp. coefficient
4 = Voltage rating
5 = Value
6 = Tolerance



• Capacitor value

010 = 1pF
100 = 10pF
101 = 100pF
102 = 1000pF = 0.001μF
103 = 0.01μF



• Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	-80	-150	-220	-330	-470	-750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = -470 ± 60ppm/°C

• Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40	+80	+100	More than 10μF – 10 ~ +50
							-20	-20	-0	Less than 4.7μF -10 ~ +75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

• Voltage rating

1st word \ 2nd word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	-
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	-
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	-

• Chip capacitors

(EX) C C 7 3 F S L 1 H 0 0 0 J
1 2 3 4 5 6 7
(Chip) (CH, RH, UJ, SL)

(EX) C K 7 3 F F 1 H 0 0 0 Z
1 2 3 4 5 6 7
(Chip) (B, F)

Refer to the table above.
1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Voltage rating
6 = Value
7 = Tolerance

Dimension (Chip capacitors)

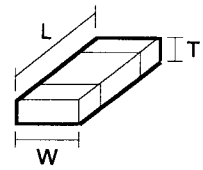
Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
A	4.5 ± 0.5	3.2 ± 0.4	Less than 2.0
B	4.5 ± 0.5	2.0 ± 0.3	Less than 2.0
C	4.5 ± 0.5	1.25 ± 0.2	Less than 1.25
D	3.2 ± 0.4	2.5 ± 0.3	Less than 1.5
E	3.2 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25
G	1.6 ± 0.2	0.8 ± 0.2	Less than 1.0

RESISTORS

• Chip resistor (Carbon)

(EX) R K 7 3 E B 2 B 0 0 0 J
1 2 3 4 5 6 7
(Chip) (B,F)

Dimension



Dimension (Chip resistor)

Dimension code	L	W	T
E	3.2 ± 0.2	1.6 ± 0.2	10
F	2.0 ± 0.3	1.25 ± 0.2	10
G	1.6±0.2	0.8±0.2	0.5±0.1

• Carbon resistor (Normal type)

(EX) R D 1 4 B B 2 C 0 0 0 J
1 2 3 4 5 6 7

1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Rating wattage
6 = Value
7 = Tolerance

Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

X-ME5

SPECIFICATIONS

Cassette deck section

Track ..... 4-track, 2-channel stereo
Recording system ..... AC bias system
(Frequency : 105kHz)

Heads
A deck Playback head 1
b deck Playback/recording head 1
Erasing head 1

Motors
A deck 1
B deck 1

Fast winding time ..... Approx. 110 seconds
(C-60 tape)

Frequency response
Normal tape ..... 35Hz to 17,000Hz, ±3dB
CrO_2 tape ..... 35Hz to 18,000Hz, ±3dB

Signal to noise ratio
Dolby B NR ON ..... 63dB (CrO_2 tape)
Dolby NR OFF ..... 56dB (CrO_2 tape)

Harmonic distortion ..... Less than 3%
(315Hz, 3rd H.D., 250nWb/m, CrO_2 tape)

Wow and flutter ..... 0.1% (W.R.M.S.)

CD player section

Laser ..... Semiconductor laser
Playing rotation ..... 200rpm~500rpm (CLV)
Frequency response ..... 8Hz~20kHz, ±1.0dB
Signal to noise ratio ..... More than 93dB
Total harmonic distortion
..... Less than 0.01% (at 1kHz)
Channel separation ..... More than 85dB (at 1kHz)
Wow and flutter ..... Unmeasurable limit

General

Dimensions ..... W : 270mm (10-5/8")
H : 205mm (8-1/16")
D : 280mm (11")

Weight (net)
X-ME5 ..... 5.0kg (11lb)

Note : KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note :
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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